```
=> fil reg
FILE 'REGISTRY' ENTERED AT 09:53:35 ON 11 MAR 2003
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STRUCTURE FILE UPDATES:   10 MAR 2003  HIGHEST RN 497818-02-7
DICTIONARY FILE UPDATES:  10 MAR 2003  HIGHEST RN 497818-02-7

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available.  See HELP
PROPERTIES for more information.  See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d ide can l2

L2   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
RN   9072-19-9  REGISTRY
CN   Fucoidan (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   Fucoidin
CN   Fucoidine
CN   Nemacystus mucilage
MF   Unspecified
CI   PMS, COM, MAN
PCT  Manual registration
LC   STN Files:   AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA,
       CANCERLIT, CAPLUS, CHEMCATS, CIN, CSCHEM, EMBASE, IFICDB, IFIPAT,
       IFIUDB, MEDLINE, NAPRALERT, PROMT, TOXCENTER, USPAT2, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
             683 REFERENCES IN FILE CA (1962 TO DATE)
              39 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
             684 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE   1:  138:136255

REFERENCE   2:  138:117807

REFERENCE   3:  138:112440

REFERENCE   4:  138:69631

REFERENCE   5:  138:54454

REFERENCE   6:  138:44563

REFERENCE   7:  138:37388

REFERENCE   8:  138:20954

REFERENCE   9:  138:13533
```

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 – 703-308-4498
jan.delaval@uspto.gov

REFERENCE 10: 138:8269

=> d ide can l3 tot

L3 ANSWER 1 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 213832-60-1 REGISTRY
CN Fucoidan, acetate (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Acetyl fucoidan
MF C2 H4 O2 . x Unspecified
SR CA
LC STN Files: BIOSIS, CA, CAPLUS

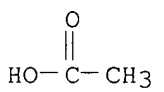
CM 1

CRN 9072-19-9
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-19-7
CMF C2 H4 O2



3 REFERENCES IN FILE CA (1962 TO DATE)
3 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 134:68485

REFERENCE 2: 130:97113

REFERENCE 3: 129:291355

L3 ANSWER 2 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 158853-89-5 REGISTRY
CN Fucoidan, 3-amino-2-hydroxypropyl ether (9CI) (CA INDEX NAME)
MF C3 H9 N O2 . x Unspecified
PCT Manual registration
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER

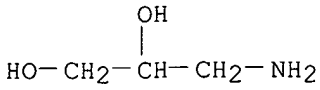
CM 1

CRN 9072-19-9
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 616-30-8
CMF C3 H9 N O2



1 REFERENCES IN FILE CA (1962 TO DATE)
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 121:271676

L3 ANSWER 3 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 120574-85-8 REGISTRY
CN Cytidine, 2',3'-dideoxy-, mixt. with fucoidan (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Fucoidan, mixt. contg. (9CI)
FS STEREOSEARCH
MF C9 H13 N3 O3 . Unspecified
CI MXS
SR CA
LC STN Files: CA, CAPLUS, DRUGPAT, DRUGUPDATES, TOXCENTER

CM 1

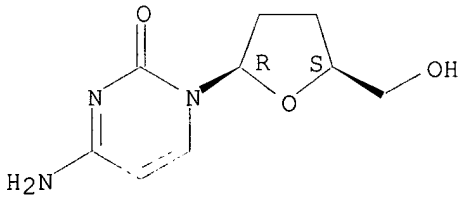
CRN 9072-19-9
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 7481-89-2
CMF C9 H13 N3 O3

Absolute stereochemistry. Rotation (+).



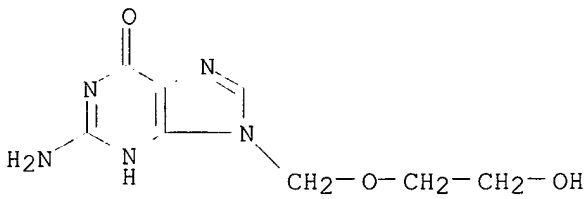
1 REFERENCES IN FILE CA (1962 TO DATE)
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 110:219081

L3 ANSWER 4 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 120485-65-6 REGISTRY
CN Fucoidan, mixt. with 2-amino-1,9-dihydro-9-[(2-hydroxyethoxy)methyl]-6H-purin-6-one (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 6H-Purin-6-one, 2-amino-1,9-dihydro-9-[(2-hydroxyethoxy)methyl]-, mixt. contg. (9CI)
MF C8 H11 N5 O3 . Unspecified
CI MXS
SR CA
LC STN Files: CA, CAPLUS, DRUGPAT, TOXCENTER

CM 1

CRN 59277-89-3
CMF C8 H11 N5 O3



CM 2

CRN 9072-19-9
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
1 REFERENCES IN FILE CA (1962 TO DATE)
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

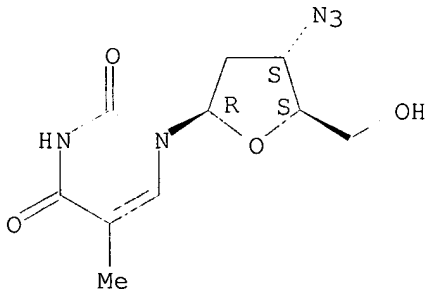
REFERENCE 1: 110:219081

L3 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2003 ACS
RN 120485-60-1 REGISTRY
CN Thymidine, 3'-azido-3'-deoxy-, mixt. with fucoidan (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Fucoidan, mixt. contg. (9CI)
FS STEREOSEARCH
MF C10 H13 N5 O4 . Unspecified
CI MXS
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER

CM 1

CRN 30516-87-1
CMF C10 H13 N5 O4

Absolute stereochemistry. Rotation (+).



CM 2

CRN 9072-19-9

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     CMF  Unspecified
     CCI  PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
               1 REFERENCES IN FILE CA (1962 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE   1:  110:219081


=> d his

     (FILE 'HOME' ENTERED AT 08:53:17 ON 11 MAR 2003)
               SET COST OFF

     FILE 'HCAPLUS' ENTERED AT 08:53:28 ON 11 MAR 2003
               E FUCOIDAN/CT
               E E3+ALL
L1          684 S E4

     FILE 'REGISTRY' ENTERED AT 08:53:58 ON 11 MAR 2003
L2            1 S 9072-19-9
L3            5 S 9072-19-9/CRN

     FILE 'HCAPLUS' ENTERED AT 08:54:41 ON 11 MAR 2003
L4         1028 S FUCOIDIN# OR FUCOIDAN# OR NEMACYSTUS MUCILAGE
L5            5 S L3
L6         1048 S L1,L4,L5
               E FUCOIDAN
L7          739 S E3
L8          316 S E15,E17
L9         1048 S L6-L8
L10         225 S NITROGEN MONOOXIDE

     FILE 'REGISTRY' ENTERED AT 08:56:36 ON 11 MAR 2003
L11           1 S 10102-43-9

     FILE 'HCAPLUS' ENTERED AT 08:57:40 ON 11 MAR 2003
L12       70393 S L11
L13      135853 S OHM11771 OR OHM()(11771 OR 11 771) OR NITROGEN()(MONOXIDE OR
L14           7 S L10,L12,L13 AND L9
               E INTERLEUKIN/CT
L15        5859 S E39
               E E144+ALL
L16        6645 S E23,E46
L17       85930 S E7,E6+NT
L18      117789 S IL OR IL12 OR INTERLEUKIN OR (IL OR INTERLEUKIN)(L)12
L19          38 S L9 AND L15-L18
               E INTERFERON/CT
L20         300 S E3
L21       30764 S E89
               E E71+ALL
L22       54117 S E6+NT
L23       30764 S E6(L)GAMMA
L24       41617 S IFNGAMMA OR GAMMAIFN OR (IFN OR INTERFERON)(L)GAMMA
L25          15 S L9 AND L20-L24
               E IGE/CT
               E E3+ALL
L26        9782 S E2
               E IMMUNOGLOBULIN/CT
               E IMMUNOGLOBULINS/CT
L27        9782 S E38,E39
               E  E3+ALL
```

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L28       10193 S E7,E6 (L) "E"
L29           3 S L9 AND L26-L28
L30           6 S L9 AND (IGE OR (IG OR IMMUNOGLOBULIN)(S)"E")
                E CYTOKINE/CT
                E E48+ALL
L31       76929 S E5,E4
L32      157526 S E4+NT
L33          46 S L9 AND L31,L32
L34          37 S L9 AND CYTOKINE
L35          18 S L9 AND LYMPHOKINE
L36          66 S L14,L19,L25,L29,L30,L33-L35
                E WO2000-JP5489/AP,PRN
L37           1 S E3,E4
                E JP99-234262/AP,PRN
L38           1 S E4
                E JP2000-69223/AP,PRN
L39           1 S E4
                E TAKARA/PA,CS
L40         772 S E93-E129
L41        1582 S E3-E145
L42        3405 S (TAKARA? OR SHUZO?)/PA,CS
L43          29 S L9 AND L40-L42
                E TOMINAGA T/AU
L44         218 S E3,E4,E17-E19
                E TAKANARI/AU
                E YAMASHITA S/AU
L45         385 S E3
                E YAMASHITA SYU/AU
L46           7 S E6,E7
                E SYUSAK/AU
                E MIZUTANI S/AU
L47         106 S E3,E34
                E SHIGETOSHI/AU
                E SAGAWA H/AU
L48         386 S E3,E11,E12
                E HIROAKI S/AU
L49           1 S E3
                E KATO I/AU
L50         728 S E3-E5,E22-E25
                E IKUNOSH/AU
L51           5 S E4
L52          35 S L44-L51 AND L9
L53           2 S L36 AND L43,L52
L54          34 S L43,L52 NOT L53
L55          14 S L54 AND (FOOD# OR FEED? OR BEVERAGE# OR HEALTH FOOD# OR DRUG#
                SEL DN AN 3 6 10 13 14
L56           9 S L55 NOT E1-E15
L57           0 S L54 AND (FOOD? OR NUTRI?)/SC,SX NOT L55
L58          64 S L36 NOT L40-L57
                SEL DN AN 12 14 16 27 30 40 52
L59           7 S L58 AND E16-E36
                E ALLERGY/CT
                E E3+ALL
L60       19556 S E3,E2+NT
                E E15+ALL
L61        7639 S E3
                E E7+ALL
L62        6554 S E4
                E E15+ALL
L63       13841 S E5
                E E4+ALL
L64       31196 S E4+NT
                E E13+ALL
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L65          8958 S E4,E3+NT
                  E IMMUN/CT
                  E IMMUNOS/CT
L66         15342 S E12+NT OR E20+NT
L67         25407 S E26+NT OR E27+NT
L68            26 S L9 AND L60-L67
L69            11 S L68 NOT L36,L40-L59
L70            91 S L9 AND (NUTRI? OR FOOD? OR FEED? OR BEVERAG? OR DRINK? OR JUI
L71            79 S L9 AND (BEVERAG? OR ?DRINK? OR ?JUICE? OR FOOD? OR FEED?)/BI
L72            30 S L9 (L) FFD/RL
L73            18 S L53,L56,L59
L74             4 S L68 AND L73
L75            18 S L73,L74
L76            14 S L70-L72 AND L75
L77            18 S L75,L76
L78            89 S L70-L72 NOT L77
L79            67 S L78 AND (PY<=2000 OR PRY<=2000 OR AY<=2000)
L80            37 S L79 AND (FOOD? OR NUTRI?)/SC
                  SEL DN AN 5 24
L81             2 S L80 AND E1-E6
L82            20 S L77,L81
L83            30 S L79 NOT L80
L84            74 S L9 AND (?INFLAM? OR LEUKOTRIEN?)
L85            19 S L84 AND L19,L29,L30,L36,L60-L69
L86             1 S L84 AND L70-L72
L87            20 S L85,L86
                  SEL DN AN 10 11 14 15 16 19 20
L88             7 S E7-E27 AND L87
L89            27 S L82,L88 AND L4-L10,L12-L88

     FILE 'REGISTRY' ENTERED AT 09:53:35 ON 11 MAR 2003

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 09:53:56 ON 11 MAR 2003
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FILE COVERS 1907 - 11 Mar 2003  VOL 138 ISS 11
FILE LAST UPDATED: 10 Mar 2003  (20030310/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


=> d l89 all hitstr tot

L89  ANSWER 1 OF 27  HCAPLUS  COPYRIGHT 2003 ACS
AN   2002:800750  HCAPLUS
DN   137:293990
TI   Functional foods, beverages, and feeds
     containing fucoidan and agarooligosaccharides
```

IN Oyashiki, Haruo
PA **Takara Bio Inc., Japan**
SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A23L001-308
ICS A21D002-18; A23C009-152; A23C011-10; A23C013-12; A23F003-14; A23G003-00; A23K001-16; A23L001-06; A23L001-16; A23L001-317; A23L001-325; A23L001-48; A23L002-52
CC 17-6 (**Food** and **Feed** Chemistry)
Section cross-reference(s): **18**
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002306131	A2	20021022	JP 2001-117144	20010416
PRAI	JP 2001-117144		20010416		

AB **Foods, beverages,** or **feeds** contain **fucoidan,** its hydrolyzates, or their salts and agarooligosaccharides. The **foods** are effective for health improvement. Green tea **beverage** contg. **fucoidan** (from Kjellmaniella crassifolia) and agarooligosaccharides (prepd. from agar) was manufd.

ST **food beverage feed fucoidan** agarooligosaccharide; green tea **fucoidan** agarooligosaccharide health improvement

IT Pasta
(Chinese; functional **foods, beverages,** and **feeds** contg. **fucoidan** and agarooligosaccharides)

IT Tea products
(**beverages,** green; functional **foods, beverages,** and **feeds** contg. **fucoidan** and agarooligosaccharides)

IT Bakery products
(buns; functional **foods, beverages,** and **feeds** contg. **fucoidan** and agarooligosaccharides)

IT **Feed**
(for fish or livestock; functional **foods, beverages**, and **feeds** contg. **fucoidan** and agarooligosaccharides)

IT Alcoholic **beverages**
Bread
Candy
Chocolate
Feed additives
Food additives
Milk
Sake
Soybean curd
(functional **foods, beverages,** and **feeds** contg. **fucoidan** and agarooligosaccharides)

IT Oligosaccharides, biological studies
RL: **FFD (Food or feed use)**; SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(functional **foods, beverages,** and **feeds** contg. **fucoidan** and agarooligosaccharides)

IT **Beverages**
(health; functional **foods, beverages,** and **feeds** contg. **fucoidan** and agarooligosaccharides)

IT Fish
(kamaboko; functional **foods, beverages,** and **feeds** contg. **fucoidan** and agarooligosaccharides)

IT Jams and Jellies

(orange; functional **foods**, **beverages**, and **feeds** contg. **fucoidan** and agarooligosaccharides)
IT Meat
(sausage; functional **foods**, **beverages**, and **feeds** contg. **fucoidan** and agarooligosaccharides)
IT **Beverages**
(sports; functional **foods**, **beverages**, and **feeds** contg. **fucoidan** and agarooligosaccharides)
IT 9002-18-0, Agar
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(functional **foods**, **beverages**, and **feeds** contg. **fucoidan** and agarooligosaccharides)
IT **9072-19-9P**, **Fucoidan**
RL: **FFD (Food or feed use)**; PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(functional **foods**, **beverages**, and **feeds** contg. **fucoidan** and agarooligosaccharides)
IT 5627-25-8P, Agarobiose
RL: **FFD (Food or feed use)**; SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(functional **foods**, **beverages**, and **feeds** contg. **fucoidan** and agarooligosaccharides)
IT **9072-19-9P**, **Fucoidan**
RL: **FFD (Food or feed use)**; PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(functional **foods**, **beverages**, and **feeds** contg. **fucoidan** and agarooligosaccharides)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 2 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:220385 HCAPLUS
DN 136:252460
TI Homeostasis-maintaining agents
IN Nishiyama, Eiji; **Sagawa, Hiroaki**; Hino, Fumitsugu; Morihara, Etsuko; Sakai, Takeshi; Oyashiki, Haruo; **Kato, Ikunoshin**
PA **Takara Shuzo Co., Ltd., Japan**
SO PCT Int. Appl., 86 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM A61K031-737
ICS A61K035-80; A61P043-00; A61P001-16; A61P003-08; A61P003-06; A61P035-00; A61P031-18; A61P001-04; A23L002-52; A23L001-29; A23K001-16; C08B037-00
CC 63-4 (Pharmaceuticals)
Section cross-reference(s): 1, **17**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002022140	A1	20020321	WO 2001-JP7894	20010912

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2001088040 A5 20020326 AU 2001-88040 20010912
PRAI JP 2000-278712 A 20000913
JP 2000-295077 A 20000927
JP 2000-342224 A 20001109
JP 2000-379313 A 20001213
JP 2001-128295 A 20010425
JP 2001-179335 A 20010613
WO 2001-JP7894 W 20010912

AB Disclosed are biol. homeostasis-maintaining agents, **foods**, **drinks** or **feeds** which comprise **fucoidan**, its decompn. products or salts thereof and have an effect of maintaining the homeostasis of living bodies. Also disclosed are **fucoidan** and marine algae exts. which are less colored, have relieved bitterness and a smaller iodine content and show a fresh feel; **foods**, **drinks**, seasonings, **feeds**, cosmetics or drugs contg. the above-mentioned **fucoidan** and/or marine algae exts.; and a process for efficiently producing the same.

ST **fucoidan** marine algae ext homeostasis **food**

IT Liver, disease
(fibrosis; marine algae exts. as homeostasis-maintaining agents)

IT Cytoprotective agents
(hepatoprotectants; marine algae exts. as homeostasis-maintaining agents)

IT Anti-AIDS agents
Anticholesteremic agents
Anticoagulants
Antitumor agents
Antiulcer agents
Beverages
Feed
Food
Homeostasis
Kjellmaniella crassifolia
Marine algae
Seaweed
(marine algae exts. as homeostasis-maintaining agents)

IT Lipids, biological studies
RL: NPO (Natural product occurrence); PAC (Pharmacological activity); BIOL (Biological study); OCCU (Occurrence)
(neutral, blood, lowering of; marine algae exts. as homeostasis-maintaining agents)

IT 50-99-7, D-Glucose, biological studies
RL: NPO (Natural product occurrence); PAC (Pharmacological activity); BIOL (Biological study); OCCU (Occurrence)
(blood, lowering of; marine algae exts. as homeostasis-maintaining agents)

IT 50-81-7, L-Ascorbic acid, biological studies 52-90-4, L-Cysteine, biological studies 70-18-8, Glutathione, biological studies 89-65-6, Erythorbic acid
RL: NPO (Natural product occurrence); PAC (Pharmacological activity); BIOL (Biological study); OCCU (Occurrence)
(extn. in presence of reducing agents; marine algae exts. as homeostasis-maintaining agents)

IT **9072-19-9, Fucoidan** 184865-69-8 289890-05-7 289890-06-8 289890-07-9 289890-08-0 289890-09-1 289890-10-4
RL: NPO (Natural product occurrence); PAC (Pharmacological activity); BIOL (Biological study); OCCU (Occurrence)
(marine algae exts. as homeostasis-maintaining agents)

IT 9001-92-7, Protease
RL: NPO (Natural product occurrence); PAC (Pharmacological activity); BIOL (Biological study); OCCU (Occurrence)
(pretreatment with; marine algae exts. as homeostasis-maintaining agents)

RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Kabushiki Kaisha Kibun Food Chemiphar; JP 6157519 A 1986
(2) Kabushiki Kaisha Kibun Food Chemiphar; JP 6157520 A 1986
(3) LI, D; Huazhong Nongye Daxue Xuebao 1999, V18(2), P191 HCAPLUS
(4) LI, F; Zhongguo Haiyang Yaowu 2000, V19(5), P12 HCAPLUS
(5) Takara Shuzo Co Ltd; EP 1057833 A1 1999 HCAPLUS
(6) Takara Shuzo Co Ltd; JP 2001261704 A 1999 HCAPLUS
(7) Takara Shuzo Co Ltd; AU 9924401 A1 1999 HCAPLUS
(8) Takara Shuzo Co Ltd; WO 9941288 A1 1999 HCAPLUS
(9) Takara Shuzo Co Ltd; WO 0050464 A1 2000 HCAPLUS
(10) Takara Shuzo Co Ltd; WO 0062785 A1 2000 HCAPLUS
(11) Takara Shuzo Co Ltd; JP 2001224369 A 2000 HCAPLUS
(12) Takara Shuzo Co Ltd; JP 2001226392 A 2000 HCAPLUS
(13) Takara Shuzo Co Ltd; WO 0113925 A1 2001 HCAPLUS
(14) Takara Shuzoh Co Ltd; CN 1209749 A 1999 HCAPLUS
(15) Takara Shuzoh Co Ltd; CN 1221320 A 1999 HCAPLUS
(16) Takara Shuzoh Co Ltd; KR 2000010670 A 1999 HCAPLUS
(17) Takara Shuzoh Co Ltd; US 2001034335 A1 1999 HCAPLUS
(18) Takara Shuzoh Co Ltd; JP 2001218580 A 1999 HCAPLUS
(19) Takara Shuzoh Co Ltd; JP 2001224394 A2 1999 HCAPLUS
(20) Takara Shuzoh Co Ltd; JP 2001226407 A 1999 HCAPLUS
(21) Takara Shuzoh Co Ltd; JP 2001226408 A 1999 HCAPLUS
(22) Takara Shuzoh Co Ltd; CA 2243543 A 1999 HCAPLUS
(23) Takara Shuzoh Co Ltd; US 6207652 B1 1999 HCAPLUS
(24) Takara Shuzoh Co Ltd; AU 711896 B2 1999 HCAPLUS
(25) Takara Shuzoh Co Ltd; AU 720004 B2 1999 HCAPLUS
(26) Takara Shuzoh Co Ltd; EP 916269 A1 1999 HCAPLUS
(27) Takara Shuzoh Co Ltd; EP 919237 A1 1999 HCAPLUS
(28) Takara Shuzoh Co Ltd; AU 9673555 A1 1999
(29) Takara Shuzoh Co Ltd; AU 9713999 A1 1999 HCAPLUS
(30) Takara Shuzoh Co Ltd; WO 9726896 A1 1999 HCAPLUS
(31) Takara Shuzoh Co Ltd; AU 9727898 A1 1999 HCAPLUS
(32) Takara Shuzoh Co Ltd; WO 9747208 A1 1999 HCAPLUS
(33) Tanaka, M; JP 866159 A 1996
(34) Tanaka, Y; JP 01218573 A 1989
(35) Tanaka, Y; IT 1228458 A 1989
(36) Tanaka, Y; GB 2219484 A 1989
(37) Tanaka, Y; GB 2219484 B 1989
(38) Tanaka, Y; FR 2627672 A 1989
(39) Tanaka, Y; DE 3905866 A 1989
(40) Tanaka, Y; DE 3905866 C 1989
(41) Tanaka, Y; JP 475753 B 1989
(42) Tanaka, Y; US 4913915 A 1989
(43) Tanaka, Y; CH 681416 A 1989
(44) Tanaka, Y; IL 87261 A 1989
(45) Tanaka, Y; AU 8822122 A 1989
(46) Yu, K; Vopr Pitan 2000, V69(1/2), P22
IT **9072-19-9, Fucoidan**
RL: NPO (Natural product occurrence); PAC (Pharmacological activity); BIOL (Biological study); OCCU (Occurrence)
(marine algae exts. as homeostasis-maintaining agents)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 3 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **2001:254582** HCAPLUS
DN **134:265601**
TI **Foods** containing **fucoidan** for treatment of NUD (non-ulcer dyspepsia)
IN Yoshikawa, Masaki; Kudo, Tatsuyuki; Nagaoka, Masato; Hashimoto, Shusuke;

Kamiyama, Sadao; Shibata, Hideyuki; Takagi, Itsuko
PA Yakult Honsha Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A23L001-30
ICS A23L002-52; A23L002-38; A61K031-715; A61K035-78; A61K035-80; A61P001-04
CC 17-13 (**Food** and **Feed** Chemistry)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001095528	A2	20010410	JP 1999-272232	19990927 <--
PRAI JP 1999-272232		19990927 <--		

my app

AB The **foods** contain **fucoidan** derived from brown algae. The **foods**, e.g., tea-like **beverages**, may also contain exts. from Senna tea, kaki leaves, Houttuynia cordata, and/or Foeniculum vulgare. A **beverage** contg. 100 mg **fucoidan** from Cladosiphon okamuranus improved gastric conditions in humans.
ST Cladosiphon **fucoidan food** nonulcer dyspepsia treatment; brown algae **fucoidan beverage** dyspepsia treatment
IT Fennel (Foeniculum vulgare)
Houttuynia cordata
(exts.; **foods** contg. brown algae **fucoidan** for treatment of NUD (nonulcer dyspepsia))
IT Brown algae (Phaeophyceae)
Cladosiphon okamuranus
Health **food**
(**foods** contg. brown algae **fucoidan** for treatment of NUD (nonulcer dyspepsia))
IT **Beverages**
(health; **foods** contg. brown algae **fucoidan** for treatment of NUD (nonulcer dyspepsia))
IT Persimmon (Diospyros kaki)
(leaf ext.; **foods** contg. brown algae **fucoidan** for treatment of NUD (nonulcer dyspepsia))
IT Dyspepsia
(nonulcer; **foods** contg. brown algae **fucoidan** for treatment of NUD (nonulcer dyspepsia))
IT Senna (Cassia)
(tea ext.; **foods** contg. brown algae **fucoidan** for treatment of NUD (nonulcer dyspepsia))
IT **9072-19-9, Fucoidan**
RL: **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**foods** contg. brown algae **fucoidan** for treatment of NUD (nonulcer dyspepsia))
IT **9072-19-9, Fucoidan**
RL: **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**foods** contg. brown algae **fucoidan** for treatment of NUD (nonulcer dyspepsia))
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 4 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:236061 HCAPLUS
DN 135:151743
TI Functionality and **health food** application of seaweed

fucoidans
AU Sakai, Takeshi; **Kato, Ikunoshi**
CS Bio Business Division, **Takara Shuzo** Co., Ltd., Japan
SO New Food Industry (2001), 43(2), 8-12
CODEN: NYFIAM; ISSN: 0547-0277
PB Shokuhin Shizai Kenkyukai
DT Journal; General Review
LA Japanese
CC 17-0 (**Food** and **Feed** Chemistry)
AB A review with 20 refs. on a no. of health **foods** and prodn. and usefulness thereof.
ST review health **food** seaweed **fucoidan**
IT **Health food**
Seaweed
(functionality and health **food** application of seaweed **fucoidans**)
IT **9072-19-9, fucoidan**
RL: **FFD (Food or feed use)**; BIOL (Biological study); USES (Uses)
(functionality and health **food** application of seaweed **fucoidans**)
IT **9072-19-9, fucoidan**
RL: **FFD (Food or feed use)**; BIOL (Biological study); USES (Uses)
(functionality and health **food** application of seaweed **fucoidans**)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 5 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:152496 HCAPLUS
DN 134:198038
TI Remedies containing **fucoidan** and/or its decomposition product
IN **Tominaga, Takanari; Yamashita, Syusaku; Mizutani, Shigetoshi; Sagawa, Hiroaki; Kato, Ikunoshin**
PA **Takara Shuzo Co., Ltd., Japan**
SO PCT Int. Appl., 73 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM A61K031-737
ICS A61K035-80; A61K035-56; A61P037-02; A61P043-00; A61P037-08; C08B037-00
CC 63-4 (Pharmaceuticals)
Section cross-reference(s): **17**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001013925	A1	20010301	WO 2000-JP5489	20000817 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2000065934	A5	20010319	AU 2000-65934	20000817 <--
EP 1226826	A1	20020731	EP 2000-953450	20000817 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
PRAI JP 1999-234262	A	19990820 <--		

JP 2000-69223 A 20000313 <--
WO 2000-JP5489 W 20000817 <--

AB The invention relates to remedies or preventives for diseases with a need for the regulation of the prodn. of **cytokines**, diseases with a need for the prodn. of **nitrogen monoxide** or allergic diseases characterized by contg. as the active ingredient **fucoidan** and/or its decompn. product; and **foods**, **drinks** or **feeds** for regulating the prodn. of **cytokines**, **foods**, **drinks** or **feeds** for inducing the prodn. of **nitrogen monoxide**, antiallergic **foods**, **drinks** or **feeds**, etc. contg. **fucoidan** and/or its decompn. product.

ST **fucoidan cytokine** regulation disease; antiallergy **fucoidan** decompn product; **nitrogen monoxide** disease **fucoidan**

IT **Immunoglobulins**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**E**, inhibitors; remedies contg. **fucoidan** and/or its decompn. product)

IT Algae
Echinoderm (Echinodermata)
(**fucoidan** from; remedies contg. **fucoidan** and/or its decompn. product)

IT Drug delivery systems
(oral; remedies contg. **fucoidan** and/or its decompn. product)

IT **Allergy inhibitors**
Beverages
Feed
Food
Immunosuppressants
(remedies contg. **fucoidan** and/or its decompn. product)

IT **Cytokines**
Interferons
Interleukin 12
Interleukins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(remedies contg. **fucoidan** and/or its decompn. product)

IT **Interferons**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(**.gamma.**; remedies contg. **fucoidan** and/or its decompn. product)

IT **10102-43-9**, **Nitrogen monoxide**, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(diseases related to prodn. of; remedies contg. **fucoidan** and/or its decompn. product)

IT 328081-45-4P
RL: PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(remedies contg. **fucoidan** and/or its decompn. product)

IT **9072-19-9**, **Fucoidan**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remedies contg. **fucoidan** and/or its decompn. product)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Dainippon Ink And Chemicals Inc; JP 09255577 A 1997 HCAPLUS
(2) Granert, C; Infect Immun 1999, V67(5), P2071 HCAPLUS
(3) Kyodo Nyugyo K K; JP 1072362 A 1998
(4) Shun, J; 1996, V14(3), P990 HCAPLUS
(5) The Australian National Universitay; JP 02502006 A

(6) The Australian National Universitay; JP 09328431 A HCAPLUS
(7) The Australian National Universitay; IL 106354 A1 HCAPLUS
(8) The Australian National Universitay; CA 1316828 A1 HCAPLUS
(9) The Australian National Universitay; AT 160941 E HCAPLUS
(10) The Australian National Universitay; AT 178212 E HCAPLUS
(11) The Australian National Universitay; JP 2701904 B2 HCAPLUS
(12) The Australian National Universitay; EP 355088 A1 HCAPLUS
(13) The Australian National Universitay; EP 355088 B1 HCAPLUS
(14) The Australian National Universitay; US 5541166 A HCAPLUS
(15) The Australian National Universitay; AU 605839 B2 HCAPLUS
(16) The Australian National Universitay; EP 631784 A1 HCAPLUS
(17) The Australian National Universitay; EP 631784 B1 HCAPLUS
(18) The Australian National Universitay; IL 85145 A1 HCAPLUS
(19) The Australian National Universitay; AU 8812410 A1 HCAPLUS
(20) The Australian National Universitay; WO 8805301 A1 1988 HCAPLUS
(21) Yokokawa, K; JOURNAL OF CLINICAL INVESTIGATION 1993, V92(4), P2080 HCAPLUS

IT **10102-43-9, Nitrogen monoxide**, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(diseases related to prodn. of; remedies contg. **fucoidan** and/or its decompn. product)
RN 10102-43-9 HCAPLUS
CN Nitrogen oxide (NO) (8CI, 9CI) (CA INDEX NAME)

N═O

IT **9072-19-9, Fucoidan**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remedies contg. **fucoidan** and/or its decompn. product)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 6 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:756531 HCAPLUS
DN 133:325613
TI Remedies or preventives for diseases with need for growth factor production-inducing effect
IN **Sagawa, Hiroaki**; Sakai, Takeshi; Kobayashi, Eiji; Li, Tuo-Ping; Ohnogi, Hiromu; Nishimura, Kaori; Nishiyama, Eiji; Wu, Hua-Kang; **Mizutani, Shigetoshi**; **Kato, Ikunoshin**
PA **Takara Shuzo Co., Ltd., Japan**
SO PCT Int. Appl., 158 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC A61K031-737; A61K031-70; A61K031-7016; A61K031-702; A61K007-40; A61P043-00; A23L002-52; A23L001-29; A23K001-16; C08B037-00
CC 63-4 (Pharmaceuticals)
Section cross-reference(s): **17**, 62
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000062785	A1	20001026	WO 2000-JP2432	20000414

W: AE, AG, AL, AM, ~~AT, AU~~, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW,

AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1175907 A1 20020130 EP 2000-917309 20000414
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
PRAI JP 1999-108067 A 19990415
JP 1999-108499 A 19990415
JP 1999-114542 A 19990422
JP 1999-129163 A 19990510
JP 1999-142343 A 19990521
JP 1999-154662 A 19990602
JP 1999-200982 A 19990714
JP 1999-275231 A 19990928
JP 1999-375606 A 19991228
JP 2000-99941 A 20000331
WO 2000-JP2432 W 20000414
OS MARPAT 133:325613
AB The invention relates to remedies or preventives for diseases with a need for a growth factor prodn.-inducing effect, characterized by contg. member(s) selected from the group consisting of acidic polysaccharides and degrdn. products thereof, acidic oligosaccharides, acidic monosaccharides, acidic sugar alcs. and salts thereof each having an effect of inducing the prodn. of growth factor; **foods**, **drinks** or **feeds** for inducing the prodn. of growth factor; cosmetics for inducing the prodn. of growth factor; and growth factor prodn. regulators.
ST acidic polysaccharide disease growth factor induction
IT Alditols
Monosaccharides
Oligosaccharides, biological studies
Polysaccharides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(acidic; remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT Cosmetics
(cleansing, facial; remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT Cosmetics
(creams; remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT Cosmetics
(emulsions; remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT Cosmetics
(lotions; remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT Cosmetics
(packs; remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT Algae
Animal
Bath preparations
Beverages
Cosmetics
Detergents
Disease, animal
Feed
Fish
Food
Microorganism
Plant (Embryophyta)
(remedies or preventives for diseases with need for growth factor

prodn.-inducing effect)
IT Growth factors, animal
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT Soaps
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT **Cytokines**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT Prostaglandins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT Polysaccharides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(sulfated; remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT 9061-61-4, Nerve growth factor 49557-75-7, Liver cell growth factor 61912-98-9, Insulin-like growth factor
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
IT 57-50-1D, Sucrose, sulfated 58-86-6D, Xylose, sulfated 59-23-4D, Galactose, sulfated 63-42-3D, Lactose, sulfated 69-79-4D, Maltose, sulfated 99-20-7D, Trehalose, sulfated 154-17-6D, 2-DeoxyGlucose, sulfated 287-92-3, Cyclopentane 499-40-1D, IsoMaltose, sulfated 528-50-7D, Cellobiose, sulfated 547-25-1D, Turanose, sulfated 585-99-9D, Melibiose, sulfated 1109-28-0D, Maltotriose, sulfated 3458-28-4D, Mannose, sulfated 4618-18-2D, Lactulose, sulfated **9072-19-9, Fucoidan** 13718-94-0D, Palatinose, sulfated 30077-17-9D, Talose, sulfated 33038-63-0, Glucose sulfate 34620-77-4D, Maltohexaose, dodecyl, sulfated 34620-77-4D, Maltohexaose, sulfated 34620-78-5D, Maltoheptaose, sulfated
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Amrad Operations Pty Ltd; WO 9623003 A1 1996 HCAPLUS
(2) Belford; J Cell Physiol 1993, V157(1), P184 HCAPLUS
(3) Cancer Research Campaign Technology Limited; JP 07507596 A
(4) Cancer Research Campaign Technology Limited; EP 642533 A1 HCAPLUS
(5) Cancer Research Campaign Technology Limited; WO 9421689 A1 1994 HCAPLUS
(6) Glycomed Incorporated; JP 09503510 A
(7) Glycomed Incorporated; US 5739115 A HCAPLUS
(8) Glycomed Incorporated; EP 722326 A1 HCAPLUS
(9) Glycomed Incorporated; WO 9509637 A1 1995 HCAPLUS
(10) Glycomed Incorporated; WO 9609828 A1 1996 HCAPLUS
(11) Mendes; WO 9712598 A1 1997 HCAPLUS
(12) Mendes; WO 9712598 A1 1997 HCAPLUS
(13) Mitsubishi Kasei Corp; JP 05301824 A 1993 HCAPLUS
(14) Mitsui Norin K K; JP 07173059 A 1995 HCAPLUS
(15) Nakamura; US 5977310 A HCAPLUS
(16) Nakamura; WO 9628475 A1 HCAPLUS

(17) Nakamura; EP 816381 A1 1998 HCAPLUS
(18) Nakamura, T; JP 06312941 A 1994 HCAPLUS
(19) Prestrelski; Arch Biochem Biophys 1992, V293(2), P314 HCAPLUS
(20) Snow Brand Milk Products Co Ltd; JP 07267995 A HCAPLUS
(21) Snow Brand Milk Products Co Ltd; WO 9526984 A1 1995 HCAPLUS
(22) Takara Shuzo Co Ltd; EP 919237 A1 HCAPLUS
(23) Takara Shuzo Co Ltd; EP 941981 A1 HCAPLUS
(24) Takara Shuzo Co Ltd; EP 976717 A1 HCAPLUS
(25) Takara Shuzo Co Ltd; EP 984001 A1 HCAPLUS
(26) Takara Shuzo Co Ltd; WO 9726896 A1 1997 HCAPLUS
(27) Takara Shuzo Co Ltd; WO 9813328 A1 1998 HCAPLUS
(28) Takara Shuzo Co Ltd; WO 9839291 A1 1998 HCAPLUS
(29) Takara Shuzo Co Ltd; WO 9840346 A1 1998 HCAPLUS
(30) Takara Shuzo Co Ltd; WO 9941288 A1 1999 HCAPLUS
IT **9072-19-9, Fucoidan**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remedies or preventives for diseases with need for growth factor prodn.-inducing effect)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 7 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:754801 HCAPLUS
DN 134:192344
TI Functionality and effects of **fucoidans**
AU **Kato, Ikunoshin**; Sakai, Takeshi; **Sagawa, Hiroaki**
CS Bio Reaearch Lab., **Takara Shuzo** Co., Japan
SO Japan Fudo Saiensu (2000), 39(9), 43-47
CODEN: JAFSAA; ISSN: 0368-1122
PB Nippon Shokuhin Shuppan K.K.
DT Journal; General Review
LA Japanese
CC 17-0 (**Food** and **Feed** Chemistry)
AB A review with 10 refs. on the chem. structures of **fucoidans** and usefulness of these compds. for health **foods**.
ST review **fucoidan** chem structure health **food**
IT **Health food**
(functionality and effects of **fucoidans** for)
IT Molecular structure
(functionality and effects of **fucoidans** in relation to)
IT **9072-19-9, Fucoidan 9072-19-9D, Fucoidan**, analogs
RL: **FFD (Food or feed use)**; BIOL (Biological study); USES (Uses)
(functionality and effects of **fucoidans**)
IT **9072-19-9, Fucoidan 9072-19-9D, Fucoidan**, analogs
RL: **FFD (Food or feed use)**; BIOL (Biological study); USES (Uses)
(functionality and effects of **fucoidans**)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 8 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:358976** HCAPLUS
DN **133:103638**
TI Inhibition of leukocyte entry into the brain by the selectin blocker

fucoidin decreases **interleukin**-1 (**IL**-1) levels
but increases **IL**-8 levels in cerebrospinal fluid during
experimental pneumococcal meningitis in rabbits

7. date

AU Ostergaard, Christian; Yieng-Kow, Runa Vavia; Benfield, Thomas; Frimodt-Moller, Niels; Espersen, Frank; Lundgren, Jens D.
CS Division of Microbiology, Department of Research and Development, Statens Serum Institut, Copenhagen, DK-2300, Den.
SO Infection and Immunity (2000), 68(6), 3153-3157
CODEN: INFIBR; ISSN: 0019-9567
PB American Society for Microbiology
DT Journal
LA English
CC 15-8 (Immunochemistry)
AB The polysaccharide **fucoidin** is a selectin blocker that inhibits leukocyte recruitment into the cerebrospinal fluid (CSF) during exptl. pneumococcal meningitis. In the present study, the effect of **fucoidin** treatment on the release of the **proinflammatory cytokines** tumor necrosis factor alpha (TNF-.alpha.), **interleukin**-1 (**IL**-1), and **IL**-8 into the CSF was investigated. Rabbits (n = 7) were treated i.v. with 10 mg of **fucoidin**/kg of body wt. every second hour starting 4 h after intracisternal inoculation of .apprx.106 CFU of Streptococcus pneumoniae type 3 (untreated control group, n = 7). CSF samples were obtained every second hour during a 16-h study period. Treatment with **fucoidin** caused a consistent and significant decrease in CSF **IL**-1 levels (in picograms per mL) between **12** and 16 h (0 vs. 170, 0 vs. 526, and 60 vs. 1,467, resp.; $P < 0.02$). A less consistent decrease in CSF TNF-.alpha. levels was obsd. in the **fucoidin**-treated group, but with no significant difference between the two groups ($P > 0.05$). In contrast, there was no attenuation in CSF **IL**-8 levels. Indeed, there was a significant increase in CSF **IL**-8 levels (in picograms per mL) in the **fucoidin**-treated group at 10 and **12** h (921 vs. 574 and 1,397 vs. 569, resp.; $P < 0.09$). In conclusion, our results suggest that blood-derived leukocytes mainly are responsible for the release of **IL**-1 and to some degree TNF-.alpha. into the CSF during pneumococcal meningitis, whereas **IL**-8 may be produced by local cells within the brain.
ST leukocyte selectin **fucoidin interleukin** cerebrospinal fluid pneumococcal meningitis
IT Meningitis
(bacterial; inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits)
IT Brain
Cerebrospinal fluid
Streptococcus pneumoniae
(inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits)
IT Selectins
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits)
IT **Interleukin 1**
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)

(inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits)

IT **Interleukin 8**
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits)

IT Tumor necrosis factors
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits)

IT Blood-brain barrier
(inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits in relation to)

IT Cell migration
(leukocyte infiltration; inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits)

IT **9072-19-9, Fucoidin**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits)

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Angstwurm, K; Neurosci Lett 1995, V191, P1 HCAPLUS
(2) Bitsch, A; Neurosci Lett 1997, V237, P105 HCAPLUS
(3) Burroughs, M; Microb Pathog 1995, V19, P245 HCAPLUS
(4) Dacey, R; Antimicrob Agents Chemother 1974, V6, P437 HCAPLUS
(5) Engelhard, D; J Infect Dis 1997, V175, P979 MEDLINE
(6) Friedland, I; J Infect Dis 1995, V172, P805 HCAPLUS
(7) Granert, C; Infect Immun 1999, V67, P2071 HCAPLUS
(8) Granert, C; J Clin Investig 1994, V93, P929 HCAPLUS
(9) Harada, A; J Leukoc Biol 1994, V56, P559 HCAPLUS
(10) Lowry, O; J Biol Chem 1951, V193, P265 HCAPLUS
(11) Matsukawa, A; Inflamm Res 1998, V47, PS137 HCAPLUS
(12) Molvig, J; Scand J Immunol 1987, V26, P611 HCAPLUS
(13) Mustafa, M; J Clin Investig 1989, V84, P1253 HCAPLUS
(14) Nau, R; J Antimicrob Chemother 1997, V39, P781 HCAPLUS
(15) Ostergaard, C; Antimicrob Agents Chemother 1998, V42, P1706 HCAPLUS
(16) Ostergaard, C; Eur J Clin Microbiol Infect Dis 1996, V15, P166 MEDLINE
(17) Ostergaard, C; Infect Immun 1999, V67, P3430 HCAPLUS
(18) Quagliarello, V; J Clin Investig 1991, V87, P1360 HCAPLUS
(19) Ramilo, O; J Exp Med 1990, V172, P497 HCAPLUS
(20) Saez-Llorens, X; J Clin Investig 1991, V88, P2003 HCAPLUS
(21) Saukkonen, K; J Exp Med 1990, V171, P439 HCAPLUS
(22) Spector, R; J Clin Investig 1974, V54, P316 HCAPLUS
(23) Tang, T; J Clin Investig 1996, V97, P2485 HCAPLUS

(24) Tauber, M; Clin Infect Dis 1999, V28, P1 HCAPLUS
(25) Waage, A; J Exp Med 1989, V170, P1859 HCAPLUS
(26) Zysk, G; J Neuroimmunol 1997, V73, P77 HCAPLUS
IT **9072-19-9, Fucoidin**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(inhibition of leukocyte entry into brain by selectin blocker **fucoidin** decreases **interleukin**-1 but increases **IL**-8 in cerebrospinal fluid during pneumococcal meningitis in rabbits)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

7. date

L89 ANSWER 9 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **2000:250708** HCAPLUS
DN **133:115050**
TI Effects of sea tangle (Laminaria japonica) extract and **fucoidan** **drinks** on oxygen radicals and their scavenger enzymes in stressed mouse
AU Choi, Jin-Ho; Kim, Dae-Ik; Park, Soo-Hyun; Kim, Dong-Woo; Kim, Chang Mok; Koo, Jae Geun
CS Lab. of Biochemistry, Pukyong National University, Pusan, 608-737, S. Korea
SO Han'guk Susan Hakhoechi (1999), 32(6), 764-769
CODEN: HSHKAW; ISSN: 0374-8111
PB Korean Fisheries Society
DT Journal
LA English
CC 1-12 (Pharmacology)
AB This study was designed to investigate the effects of sea tangle (Laminaria japonica) ext. (Dasi-Ex group: dry base 4.0%) and **fucoidan**-added (Fuco-I, II, III group: **fucoidan** of 1.0%, 2.0%, 3.0% added to Dasi-Ex) **drinks** on the formation of oxygen radicals and scavenger enzyme activities of stressed mice. ICR male mice (20 g) were fed exptl. diets and these **drinks** instead of water for 18 days including 4 days of sociopsychol. stress. Dasi-Ex and Fuco-I, II and III groups resulted in a marked decreases 20.apprx.40% in basal oxygen radical (BOR) formation, and 15.apprx.25% in induced oxygen radical (IOR) formation compared with control group. Hydroxyl radical formations were significantly inhibited about 10% in Dasi-Ex group, while remarkably inhibited 30.apprx.40% in Fuco-I, II and III groups. Lipid peroxide (LPO) levels in Dasi-Ex group were not significantly different from those of control group, but Fuco-I, II and III groups resulted in a significant decreases about 10% in LPO levels compared with control group. Dasi-Ex, Fuco-I, II and III groups resulted in a marked decreases (31%, 36%, 39% and 42%, resp.) in oxidized protein levels through prodn. of carbonyl group. Significant differences in **nitric oxide** (NO) levels in Dasi-Ex group were not obtained, but NO levels were slightly inhibited about 7% in Fuco-I and II groups and 20% in Fuco-III group compared with control group. Significant differences in superoxide dismutase (SOD) and catalase (CAT) activities in Dasi-Ex and Fuco-I groups were not obtained, but Fuco-II and III groups resulted in a significant increases 25.apprx.40% in SOD activities, and about 10% in CAT activities compared with control group. These results suggest that the sociopsychol. stress and aging process could be effectively inhibited by biol. activity of sea tangle and **fucoidan** components.
ST sea tangle **fucoidan** oxygen radical stress
IT Laminaria japonica
(effects of sea tangle (Laminaria japonica) ext. and **fucoidan** **drinks** on oxygen radicals and scavenger enzymes in stressed

mouse)
IT Reactive oxygen species
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
IT Peroxides, biological studies
Peroxides, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(lipid; effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
IT Proteins, general, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(oxidized; effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
IT Lipids, biological studies
Lipids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(peroxides; effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
IT Antioxidants
(pharmaceutical; effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
IT Stress, animal
(psychosocial; effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
IT **9072-19-9, Fucoidan**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
IT 3352-57-6, Hydroxyl radical, biological studies 7782-44-7D, Oxygen, reactive species, biological studies 9001-05-2, Catalase 9054-89-1, Superoxide dismutase **10102-43-9, Nitric oxide**
, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Applegate, E; J Nutr 1984, V114, P447 HCAPLUS
(2) Bernardi, G; J Biol Chem 1962, V273, P75
(3) Choi, J; Age 1989, V12, P133 HCAPLUS
(4) Choi, J; Age 1990, V13, P61 HCAPLUS
(5) Choi, J; Age 1996, V19, P1 HCAPLUS
(6) Choi, J; Age & Nutrition 1999, V10(1), P47
(7) Choi, J; Free Rad Biol & Med 1995, V18(2), P133 HCAPLUS
(8) Choi, J; J Biochem 1991, V23(1), P61 HCAPLUS
(9) Choi, J; J Kor Soc Food Nutr 1991, V20(2), P187 HCAPLUS
(10) Choi, J; J Nutr Health & Aging 1998, V2(3), P451

(11) Choi, J; J Nutr Health & Aging 1998, V2(3), P456
(12) Choi, J; J Nutr Health & Aging 1998, V2(3), P461
(13) Choi, J; Kor J Gerontol 1994, V4(2), P61
(14) Choi, J; Kor J Life Sci 1998, V9(5), P604
(15) Choi, J; Kor J Life Sci 1998, V9(5), P612
(16) Choi, J; Kor J Life Sci 1998, V9(5), P612
(17) Choi, J; Kor J Life Sci 1999, V9(4), P430
(18) Choi, J; Kor J Life Sci 1999, V9(4), P430
(19) Choi, J; Kor J Life Sci 1999, V9(4), P439
(20) Choi, J; Kor J Life Sci 1999, V9(5), P537
(21) Ito, H; Chem Pharm Bull 1976, V24, P114
(22) Lowry, O; J Biol Chem 1951, V193, P265 HCAPLUS
(23) Nakazawa, Y; Chemotherapy 1974, V22, P1435
(24) Ogawa, N; Jpn J Psychosom Med 1966, V6, P352
(25) Oyanagui, Y; Anal Biochem 1984, V42, P290
(26) Rigo, A; Anal Biochem 1977, V81, P157 HCAPLUS
(27) Usui, T; Agric Biol Chem 1980, V44, P1965 HCAPLUS
(28) Yagi, K; Chemistry and Physics of Lipids 1987, V45, P337 HCAPLUS
(29) Yamamoto, I; J Exp Med 1981, V51, P187 MEDLINE
(30) Yu, B; Ann NY Acad Sci 1996, V786, P1 HCAPLUS
(31) Yu, B; Free Rad Biol Med 1996, V21, P651 HCAPLUS
(32) Yu, B; Soc Exp Biol Med 1990, V193, P13 HCAPLUS

IT **9072-19-9, Fucoidan**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **10102-43-9, Nitric oxide**, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effects of sea tangle (Laminaria japonica) ext. and **fucoidan drinks** on oxygen radicals and scavenger enzymes in stressed mouse)
RN 10102-43-9 HCAPLUS
CN Nitrogen oxide (NO) (8CI, 9CI) (CA INDEX NAME)

N═O

L89 ANSWER 10 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:111177 HCAPLUS
DN 132:121786
TI **Food** and pharmaceuticals containing microbicidal **fucoidan**
IN Sakai, Takeshi; Kimura, Hitomi; Katayama, Kaoru; **Kato, Ikunoshin**
PA **Takara Shuzo Co., Ltd., Japan**
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08B037-00
ICS A23L001-30; A23L002-52; A23L002-38; A61K031-725; A61K035-80
CC 17-6 (**Food** and **Feed** Chemistry)
Section cross-reference(s): 63
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000044602	A2	20000215	JP 1998-217282	19980731
PRAI	JP 1998-217282		19980731		

AB **Fucoidan** and/or derivs. as microbicides against Helicobacter, are added to **food, beverages,** and pharmaceuticals.

ST microbicide Helicobacter **food beverage** pharmaceutical

IT Helicobacter
(**food** and pharmaceuticals contg. microbicidal **fucoidan** against)

IT **Beverages**
Drugs
Food
(microbicidal **fucoidan** for)

IT **9072-19-9, Fucoidan 9072-19-9D, Fucoidan,** derivs.
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**food** and pharmaceuticals contg. microbicidal **fucoidan**)

IT **9072-19-9, Fucoidan 9072-19-9D, Fucoidan,** derivs.
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**food** and pharmaceuticals contg. microbicidal **fucoidan**)

RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 11 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:816002 HCAPLUS
DN 132:63283
TI Characteristics and utilization of "**fucoidans**" from seaweeds and their oligosaccharides
AU Sakai, Takeshi; **Kato, Ikunoshin**
CS Bio-Hirosaki Res. Lab., **Takara Shuzo** Co., Ltd., Japan
SO Gekkan Fudo Kemikaru (1999), 15(12), 66-71
CODEN: GFKEEX; ISSN: 0911-2286
PB Shokuhin Kagaku Shinbunsha
DT Journal; General Review
LA Japanese
CC 17-0 (**Food** and **Feed** Chemistry)
Section cross-reference(s): 62

AB A review with 26 refs., on characterization and application of **fucoidan,** which is a group of polysaccharides contg. sulfated fucose, from seaweed, discussing prepn. methods, discovery of **fucoidan**-degrading enzymes and their application, physicochem. properties, function, safety, and **food** or cosmetic application.

ST review **fucoidan** oligosaccharide seaweed **food** cosmetic

IT Cosmetics
Food
Seaweed
(characteristics and utilization of **fucoidans** from seaweeds and their oligosaccharides)

IT Oligosaccharides, properties

RL: PRP (Properties)
(characteristics and utilization of **fucoidans** from seaweeds and their oligosaccharides)

IT Polysaccharides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); **FFD (Food or feed use)**; PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**fucoidans**; characteristics and utilization of **fucoidans** from seaweeds and their oligosaccharides)

IT **9072-19-9P, Fucoidan**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); **FFD (Food or feed use)**; PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(characteristics and utilization of **fucoidans** from seaweeds and their oligosaccharides)

IT **9072-19-9P, Fucoidan**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); **FFD (Food or feed use)**; PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(characteristics and utilization of **fucoidans** from seaweeds and their oligosaccharides)

RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 12 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1999:531032** HCAPLUS
DN **131:183861**
TI Immunity-enhancing agent and **food**
IN Hori, Tetsuji; Kiyoshima, Junko; Yasui, Hisako
PA Yakult Honsha Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08B037-00
ICS A23L001-30; A61K031-725; A61K035-80
CC 15-2 (Immunochemistry)
Section cross-reference(s): 1, 6, **17**

? date

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11228602	A2	19990824	JP 1998-41043	19980209
PRAI	JP 1998-41043		19980209		

AB **Fucoidan**, a sulfated polysaccharide, is disclosed as an enhancer for humoral and cellular immunity. Also disclosed are safe, low cost and good taste **food** products contg. **fucoidan** as effective ingredient in enhancing immunity. **Fucoidan** was purified from seaweed of Spermatochnaceae, and used for inducing prodn. of antibody (i.e. IgA, IgM and IgG) and **interferon-.gamma.**.

ST humoral cellular immunity enhancer **fucoidan food**

IT Immunoglobulins
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(A; humoral and cellular immunity-enhancing agent and **food**)

IT Immunoglobulins
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); THU (Therapeutic use); BIOL (Biological study); FORM (Formation,

nonpreparative); USES (Uses)
(G; humoral and cellular immunity-enhancing agent and **food**)
IT Immunoglobulins
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(M; humoral and cellular immunity-enhancing agent and **food**)
IT **Immunostimulants**
(adjuvants; humoral and cellular immunity-enhancing agent and **food**)
IT Immunity
(cell-mediated, enhancer; humoral and cellular immunity-enhancing agent and **food**)
IT Anti-infective agents
Antitumor agents
Immunostimulants
Seaweed
Spermatochnaceae
(humoral and cellular immunity-enhancing agent and **food**)
IT Antibodies
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(humoral and cellular immunity-enhancing agent and **food**)
IT Immunity
(humoral, enhancer; humoral and cellular immunity-enhancing agent and **food**)
IT **Food**
(product; humoral and cellular immunity-enhancing agent and **food**)
IT **Interferons**
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); THU (Therapeutic use); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(**.gamma.**; humoral and cellular immunity-enhancing agent and **food**)
IT **9072-19-9P, Fucoidan**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **FFD (Food or feed use)**; PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(humoral and cellular immunity-enhancing agent and **food**)
IT **9072-19-9P, Fucoidan**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **FFD (Food or feed use)**; PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(humoral and cellular immunity-enhancing agent and **food**)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

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L89 ANSWER 13 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1999:291159** HCAPLUS
DN **131:97188**
TI Effects of polysaccharide **fucoidin** on cerebrospinal fluid **interleukin**-1 and tumor necrosis factor alpha in pneumococcal meningitis in the rabbit
AU Granert, Carl; Raud, Johan; Waage, Anders; Lindquist, Lars
CS Department of Infectious Diseases, Huddinge Hospital, Huddinge, S-141 86, Swed.
SO Infection and Immunity (1999), 67(5), 2071-2074

CODEN: INFIBR; ISSN: 0019-9567
PB American Society for Microbiology
DT Journal
LA English
CC 1-7 (Pharmacology)
AB The **inflammatory** response in bacterial meningitis is mediated by **cytokines**, such as tumor necrosis factor alpha (TNF-.alpha.) and **interleukin**-1 (**IL**-1), which are produced in the subarachnoid space by different cells, e.g., leukocytes, astrocytes, and microglia. The recruitment of leukocytes into the cerebrospinal fluid (CSF) has been shown to contribute to the neurol. damage in this disease, a process which could be enhanced by treatment with antibiotics. In this study, we have used a rabbit meningitis model for two sets of expts. with intracisternal (i.c.) injections of Streptococcus pneumoniae. First, pneumococcal cell wall (PCW) components were injected i.c., inducing an **inflammatory** response with pleocytosis and increased levels of CSF TNF-.alpha. and **IL**-1 at 6 and **12** h after PCW injection. Treatment with **fucoidin**, known to inhibit leukocyte rolling, abolished pleocytosis and inhibited the release of TNF-.alpha. and **IL**-1. In the second expt., live pneumococcal bacteria were injected i.c. and treatment with one dose of ampicillin (40. mg/kg of body wt. i.v.) was given 16 h after induction of meningitis, causing a sevenfold increase in CSF leukocytes over a 4-h period. CSF **IL** -1 levels at 16 h were high but did not increase further at 20 h. Also, CSF TNF-.alpha. levels were high at 16 h and tended to increase at 20 h. **Fucoidin** treatment prevented the antibiotic-induced increase of CSF leukocytes but had no effect on the TNF-.alpha. and **IL**-1 levels. Taken together, **fucoidin** reduced CSF TNF-.alpha. and **IL**-1 levels in acute bacterial meningitis induced by PCW fragments but had no effect later in the course of the disease, when live bacteria were used and an **inflammatory** increase was caused by a dose of antibiotics.
ST polysaccharide **fucoidan** cerebrospinal fluid **interleukin** TNFalpha; pneumococcal meningitis **fucoidan** CSF **interleukin** TNFalpha; **inflammation fucoidan** pneumococcal meningitis CSF leukocyte
IT Meningitis
(bacterial; polysaccharide **fucoidan** effect on CSF **interleukin**-1, TNF-.alpha. and leukocyte recruitment in pneumococcal meningitis in rabbit)
IT Anti-**inflammatory** agents
Cerebrospinal fluid
Leukocyte
(polysaccharide **fucoidan** effect on CSF **interleukin** -1, TNF-.alpha. and leukocyte recruitment in pneumococcal meningitis in rabbit)
IT **Interleukin 1**
Tumor necrosis factors
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(polysaccharide **fucoidan** effect on CSF **interleukin** -1, TNF-.alpha. and leukocyte recruitment in pneumococcal meningitis in rabbit)
IT **9072-19-9, Fucoidin**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polysaccharide **fucoidan** effect on CSF **interleukin** -1, TNF-.alpha. and leukocyte recruitment in pneumococcal meningitis in rabbit)
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Arfors, K; Blood 1987, V69, P338 HCAPLUS

(2) Carlos, T; Blood 1994, P2068 HCAPLUS
(3) Espevik, T; J Immunol Methods 1986, V95, P99 HCAPLUS
(4) Freyer, D; Glia 1996, V16, P1 MEDLINE
(5) Gearing, A; J Immunol Methods 1987, V99, P7 HCAPLUS
(6) Granert, C; Clin Diagn Lab Immunol 1998, V5, P322 HCAPLUS
(7) Granert, C; J Clin Investig 1994, V93, P929 HCAPLUS
(8) Heumann, D; Infect Immun 1994, V62, P2715 HCAPLUS
(9) Lindbom, L; Acta Physiol Scand 1992, V146, P415 HCAPLUS
(10) Lindquist, L; Scand J Infect Dis 1987, V19, P263 MEDLINE
(11) Mosmann, T; J Immunol 1986, V136, P2348 HCAPLUS
(12) Mosmann, T; J Immunol Methods 1983, V65, P55 MEDLINE
(13) Mustafa, M; J Infect Dis 1989, V160, P818 HCAPLUS
(14) Pfister, H; Clin Infect Dis 1994, V19, P463 MEDLINE
(15) Riesenfeld-Orn, I; Infect Immun 1989, V57, P1890 HCAPLUS
(16) Saez-Llorens, X; J Clin Investig 1991, V88, P2003 HCAPLUS
(17) Saukkonen, K; J Exp Med 1990, V171, P439 HCAPLUS
(18) Sharief, M; J Infect Dis 1992, V166, P350 MEDLINE
(19) Tauber, M; J Infect Dis 1988, V157, P456 MEDLINE
(20) Tuomanen, E; J Exp Med 1989, V170, P959 MEDLINE
(21) Tuomanen, E; J Infect Dis 1987, V155, P985 HCAPLUS
(22) van Furth, A; Infect Immun 1996, V64, P4883 HCAPLUS
(23) Varki, A; Proc Natl Acad Sci USA 1994, V91, P7390 HCAPLUS
(24) Waage, A; J Exp Med 1989, V170, P1859 HCAPLUS
(25) Zysk, G; J Neuroimmunol 1997, V73, P77 HCAPLUS

IT **9072-19-9, Fucoidin**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polysaccharide **fucoidan** effect on CSF **interleukin** -1, TNF-.alpha. and leukocyte recruitment in pneumococcal meningitis in rabbit)

RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 14 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:87463 HCAPLUS
DN 130:266437
TI Development of **Fucoidan** from Kagome seaweed as novel **health food** materials
AU Sakai, Takeshi; **Kato, Ikunoshin**
CS Bio Operation Dept., **Takara** Brewing Co., Ltd., Japan
SO New Food Industry (1998), 40(12), 1-5
CODEN: NYFIAM; ISSN: 0547-0277
PB Shokuhin Shizai Kenkyukai
DT Journal; General Review
LA Japanese
CC 17-0 (**Food** and **Feed** Chemistry)
AB A review with 16 refs. on **Fucoidan** which is a group of polysaccharides contg. fucose, galactose, mannose, glucuronic acid, and sulfuric acid.
ST review Fucoian polysaccharide seaweed health **food**
IT **Health food**
Seaweed
(development of **Fucoidan** from Kagome seaweed as novel health **food** materials)
IT Polysaccharides, biological studies
RL: **FFD (Food or feed use)**; BIOL (Biological study); USES (Uses)
(development of **Fucoidan** from Kagome seaweed as novel health **food** materials)
IT **9072-19-9, Fucoidan**
RL: **FFD (Food or feed use)**; BIOL (Biological study); USES (Uses)

good date

(development of **Fucoidan** from Kagome seaweed as novel health **food** materials)

IT **9072-19-9, Fucoidan**
RL: **FFD (Food or feed use)**; BIOL (Biological study); USES (Uses)
(development of **Fucoidan** from Kagome seaweed as novel health **food** materials)

RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 15 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:492906** HCAPLUS
DN **129:215633**
TI Anaphylaxis-induced mesenteric vascular permeability, granulocyte adhesion, and platelet aggregates in rat
AU Withers, Geoffrey D.; Kubes, Paul; Ibbotson, Geoffrey; Scott, R. Brent
CS Gastrointestinal and Immunology Research Groups and Department of Pediatrics, University of Calgary, Calgary, AB, T2N 4N1, Can.
SO American Journal of Physiology (1998), 275(1, Pt. 2), H274-H284
CODEN: AJPHAP; ISSN: 0002-9513
PB American Physiological Society
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB This study investigates the response of small venules to **IgE** -dependent, antigen-mediated mast cell activation. Intravital microscopy was utilized to visualize 25-40-.mu.m mesenteric venules, mast cell degranulation (online detection), vascular permeability changes (albumin leakage), leukocyte adhesion, and the formation of platelet aggregates in rats sensitized with 10 .mu.g of i.p. egg albumin (EA) in saline- or sham-sensitized (saline alone) rats. Sensitized rats challenged with EA (1 mg/mL superfusing mesentery), but not sensitized rats challenged with BSA or sham-sensitized rats challenged with EA, exhibited mast cell degranulation with significant time-dependent increases in vascular permeability (inhibited by diphenhydramine, salbutamol, and indomethacin), leukocyte adhesion (inhibited by Web-2086), and the formation of cellular aggregates (platelet), which were assocd. with intermittent obstruction of venular flow. Anti-platelet antibody, but not anti-neutrophil antibody or **fucoidin** (selectin antagonist), prevented platelet aggregate formation. Compd. 48/80-induced mast cell degranulation caused similar changes in permeability (via different mediators) and leukocyte adhesion but did not induce platelet aggregation. EA-induced platelet aggregation was not inhibited by any of the mediators tested, and platelets isolated from sensitized rats failed to aggregate in response to direct EA challenge, suggesting release of an unidentified **inflammatory** mediator as the factor initiating platelet aggregation.
ST intestinal anaphylaxis mesenteric vessel permeability **IgE**; granulocyte adhesion intestinal anaphylaxis **IgE**; platelet aggregation intestinal anaphylaxis **IgE**
IT **Immunoglobulins**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(**E**; **IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
IT Cell adhesion
Polymorphonuclear leukocyte
(**IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
IT **Allergens**
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(**IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)

IT Mast cell
(activation; **IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
IT Platelet (blood)
(aggregation; **IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
IT Intestine, disease
Intestine, disease
(anaphylaxis; **IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
IT Anaphylaxis
Anaphylaxis
(intestinal; **IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
IT Cell activation
(mast cell; **IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
IT Blood vessel
(permeability; **IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
IT Biological transport
(permeation, vascular; **IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
IT Cell aggregation
(platelet; **IgE**-dependent, antigen-mediated mast cell activation in intestinal anaphylaxis model)
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Augustin, R; Handbook of Experimental Immunology 1979, P45.1
(2) Batchelor, J; Lancet 1975, V1, P1169 MEDLINE
(3) Blockmans, D; Blood Rev 1995, V9, P143 MEDLINE
(4) Butchers, P; Br J Pharmacol 1979, V67, P23 HCAPLUS
(5) Cines, D; J Immunol 1986, V136, P3433 HCAPLUS
(6) Coeffier, E; J Leukoc Biol 1990, V47, P234 HCAPLUS
(7) Crowe, S; Gastroenterology 1992, V103, P1075 MEDLINE
(8) Gaboury, J; J Immunol 1995, V154, P804 HCAPLUS
(9) Heavey, D; J Immunol 1988, V140, P1953 HCAPLUS
(10) Herd, C; Eur Respir J 1994, V7, P1145 HCAPLUS
(11) Hogaboam, C; Gastroenterology 1993, V104, P122 HCAPLUS
(12) Inagaki, N; Life Sci 1992, V51, P201
(13) Ishizaka, T; J Allergy Clin Immunol 1978, V61, P320 HCAPLUS
(14) Joseph, M; Eur J Immunol 1986, V16, P306 HCAPLUS
(15) Joseph, M; Nature 1983, V303, P810 HCAPLUS
(16) Kanwar, S; Microcirculation 1994, V1, P175 MEDLINE
(17) Kubes, P; Am J Physiol, Gastrointest Liver Physiol 1990, V259(22), PG300
(18) Kubes, P; Am J Physiol, Heart Circ Physiol 1996, V271(40), PH2438
(19) Kubes, P; J Immunol 1994, V152, P3570 HCAPLUS
(20) Kurose, I; Circ Res 1994, V74, P376 MEDLINE
(21) Kurose, I; Gastroenterology 1994, V107, P70 HCAPLUS
(22) Kurose, I; J Clin Invest 1994, V94, P1919 HCAPLUS
(23) Lagunoff, D; J Histochem Cytochem 1972, V20, P938 HCAPLUS
(24) Maclouf, J; J Biol Chem 1988, V263, P174 HCAPLUS
(25) Maric, M; Can J Physiol 1989, V243, P83
(26) Orr, T; Life Sci 1971, V10, P805 HCAPLUS
(27) Packham, M; Can J Physiol Pharmacol 1993, V72, P278
(28) Pearce, F; Prog Med Chem 1982, V19, P60
(29) Perdue, M; Gastroenterology 1984, V86, P391 HCAPLUS
(30) Pinckard, N; J Immunol 1977, V119, P2185
(31) Pothoulakis, C; Gastroenterology 1993, V105, P701 MEDLINE
(32) Scott, R; Am J Physiol, Gastrointest Liver Physiol 1988, V255(18), PG505
(33) Scott, R; Am J Physiol, Gastrointest Liver Physiol 1990, V259(22), PG6
(34) Scott, R; Can J Physiol Pharmacol 1996, V74, P320 HCAPLUS
(35) Shanahan, F; Int Arch Allergy Appl Immunol 1986, V80, P424 HCAPLUS

(36) Sugimoto, K; Int Arch Immunol 1994, V105, P195 HCAPLUS
(37) Theoharides, T; Biochem Pharmacol 1985, V34, P1389 HCAPLUS
(38) Yamamoto, H; J Clin All Immunol 1996, V91, P79

L89 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:429349 HCAPLUS
DN 129:174742
TI Properties of **fucoidin** extracted from kombu and its application to **food**
AU Sakai, Takeshi; **Kato, Ikunoshin**
CS **Takara Shuzo K.K., Japan**
SO Shokuhin to Kagaku (1998), 40(6), 89-93
CODEN: SHTKAY; ISSN: 0037-4105
PB Shokuhin to Kagakusha
DT Journal; General Review
LA Japanese
CC 17-0 (**Food** and **Feed** Chemistry)
Section cross-reference(s): 1, **18**
AB A review with 20 refs. on **fucoidin** extd. from kombu as a **food** material. The prepn. of **fucoidin**, the phys. properties, the physiol. functions, e.g., cancer cell apoptosis-inducing effect, the application of **fucoidin** to **food**, and the related researches are described.
ST review **fucoidin** kombu dietary fiber
IT **Food**
(functional; properties of **fucoidin** extd. from kombu and application to **food**)
IT Laminaria
(properties of **fucoidin** extd. from kombu and application to **food**)
IT Dietary fiber
(properties of **fucoidin** extd. from kombu and application to **food** as)
IT **9072-19-9, Fucoidin**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(properties of **fucoidin** extd. from kombu and application to **food**)
IT **9072-19-9, Fucoidin**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(properties of **fucoidin** extd. from kombu and application to **food**)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 17 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:402496** HCAPLUS
DN **129:40406**
TI **Foods** containing **fucoidan** for taste improvement
IN Itaya, Yoshiro
PA Itaya, Yoshiro, Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A23L001-05
ICS A21D002-18; A23B007-10; A23G001-00; A23G003-00; A23G009-02; A23L001-20; A23L001-22; A23L001-325; C08B037-00

CC 17-6 (**Food** and **Feed** Chemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10165114	A2	19980623	JP 1996-357434	19961206 <--
	JP 2932170	B2	19990809		
PRAI	JP 1996-357434		19961206 <--		

AB **Foods** contain **fucoidan** isolated from brown algae. **Fucoidan** improves tastes of **foods** by controlling sweetness and enhancing sourness or saltiness.
ST **food** additive **fucoidan** brown algae
IT Bakery products
(cakes; **foods** contg. **fucoidan** of brown algae for taste improvement)
IT Bread
Brown algae (Phaeophyceae)
Chocolate
Condiments
Decapterus muroadsi
Food additives
Soy sauce
(**foods** contg. **fucoidan** of brown algae for taste improvement)
IT Vigna angularis
(paste; **foods** contg. **fucoidan** of brown algae for taste improvement)
IT Frozen desserts
(sherbet; **foods** contg. **fucoidan** of brown algae for taste improvement)
IT Soups
(stocks; **foods** contg. **fucoidan** of brown algae for taste improvement)
IT Kumquat (Fortunella)
(sweetened; **foods** contg. **fucoidan** of brown algae for taste improvement)
IT **9072-19-9, Fucoidan**
RL: **FFD (Food or feed use)**; MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)
(**foods** contg. **fucoidan** of brown algae for taste improvement)
IT **9072-19-9, Fucoidan**
RL: **FFD (Food or feed use)**; MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)
(**foods** contg. **fucoidan** of brown algae for taste improvement)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 18 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:168535** HCAPLUS
DN **128:293900**
TI Histamine-induced biphasic macromolecular leakage in the microcirculation of the conscious hamster: evidence for a delayed **nitric oxide**-dependent leakage
AU Gimeno, G.; Carpentier, P. H.; Desquand-Billiald, S.; Hanf, R.; Finet, M.
CS Service de Pharmacologie, Laboratoire Innothera, Arcueil, 94111, Fr.
SO British Journal of Pharmacology (1998), 123(5), 943-951
CODEN: BJPCBM; ISSN: 0007-1188
PB Stockton Press
DT Journal
LA English

CC 15-9 (Immunochemistry)
Section cross-reference(s): 2

AB Late effects (up to 3 h) of i.v.-injected histamine on FITC-dextran extravasation were investigated in the conscious hamster, by use of computer-assisted image anal. of fluorescence distribution in a microscopic window of dorsal skin fold prepns. This anal. allowed measurement of local (skin) and general (all organs) extravasations caused by a bolus injection of histamine (1 mg kg-1, i.v.). Histamine doses higher than 0.01 mg kg-1 caused biphasic local and general extravasations. Initial phases developed fully within 15 min (for local) and 60 min (for general) and were followed by late phases beginning 90 min after histamine injection. Although the initial and late phases of histamine-induced extravasations had differential apparent reactivities to the autacoid, all the effects of histamine on the microcirculation (1 mg kg-1) were inhibited by pyrilamine (1 mg kg-1, i.v.) but not by cimetidine (1 mg kg-1, i.v.). Pretreatment with NG-monomethyl-L-arginine (L-NMMA, 30 mg kg-1, i.v.) or NG-nitro-L-arginine Me ester (L-NAME, 100 mg kg-1, i.v.) did not affect the initial phases but did prevent the late phases of local and general extravasations triggered by 1 mg kg-1 histamine. The inhibitory effects of L-NAME were reversed by L-arginine (30 mg kg-1) but not by D-arginine (30 mg kg-1) according to the enantioselectivity of **nitric oxide** synthase (NOS). A late NO-mediated venular dilatation occurred in response to plasma histamine. A low dose of aminoguanidine (1 mg kg-1, i.v.), a selective inhibitor of the inducible isoform of NOS (iNOS), mimicked the inhibitory effects of L-NAME on the late phases of histamine-induced macromol. extravasations and venular dilatation. Pretreatment with dexamethasone (1 mg kg-1, i.v.) prevented both the initial and late phases of histamine-induced extravasations. **Fucoidan** (1 or 25 mg kg-1, i.v.) prevented the late phases without affecting initial phases, consistent with a role for leukocytes adhesion in the development of the late NO-mediated effects of histamine. Thus, i.v. injection of histamine triggers a biphasic **inflammatory** cascade via initial activation of H1 receptors which induces a late NO-mediated PMN-dependent extravasation process.

ST histamine macromol leakage microcirculation **nitric oxide**

IT Histamine receptors
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(H1; **nitric oxide** in histamine-induced biphasic macromol. leakage in microcirculation)

IT Neutrophil
(adhesion; **nitric oxide** in histamine-induced biphasic macromol. leakage in microcirculation)

IT Blood vessel, disease
Blood vessel, disease
(microvessel, injury, leakage; **nitric oxide** in histamine-induced biphasic macromol. leakage in microcirculation)

IT Cell adhesion
(neutrophil; **nitric oxide** in histamine-induced biphasic macromol. leakage in microcirculation)

IT **Inflammation**
(**nitric oxide** in histamine-induced biphasic macromol. leakage in microcirculation)

IT 125978-95-2, **Nitric oxide** synthase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(inducible; **nitric oxide** in histamine-induced biphasic macromol. leakage in microcirculation)

IT 51-45-6, Histamine, biological studies **10102-43-9**, **Nitric oxide**, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(**nitric oxide** in histamine-induced biphasic macromol. leakage in microcirculation)

IT **10102-43-9, Nitric oxide**, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(**nitric oxide** in histamine-induced biphasic macromol. leakage in microcirculation)
RN 10102-43-9 HCAPLUS
CN Nitrogen oxide (NO) (8CI, 9CI) (CA INDEX NAME)

L89 ANSWER 19 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:122131** HCAPLUS
DN **128:242860**
TI Characteristics of histamine-induced leukocyte rolling in the undisturbed microcirculation of the rat mesentery
AU Yamaki, Kohji; Thorlacius, Henrik; Xie, Xun; Lindbom, Lennart; Hedqvist, Per; Raud, Johan
CS Department of Physiology & Pharmacology, Karolinska Institutet, Stockholm, S-171 77, Swed.
SO British Journal of Pharmacology (1998), 123(3), 390-399
CODEN: BJPCBM; ISSN: 0007-1188
PB Stockton Press
DT Journal
LA English
CC 15-9 (Immunochemistry)
AB The main objective here was to analyze the role and mode of action of the mast cell mediator histamine in leukocyte-endothelium interactions in small venules in vivo. For this purpose, the authors used a histol. approach (combined with intravital microscopy) that allows studies of rapid mediator-induced venular leukocyte accumulation, reflecting leukocyte rolling, in the undisturbed microcirculation of the rat mesentery where rolling is normally absent. The authors first examd. the relative importance of histamine and 5-hydroxytryptamine (5-HT) in acute mast cell-dependent leukocyte recruitment. The mast cell secretagogue compd. 48/80 (i.p. for 15 min) induced a marked venular accumulation of polymorphonuclear leukocytes (PMNL) which was almost abolished by combined histamine (H1)- and histamine2 (H2)-receptor blockade. In contrast, the 5-HT-receptor antagonist methysergide was inactive in this regard. Moreover, exogenous 5-HT was less active than exogenous histamine in evoking venular PMNL accumulation (histamine response dose-dependent; 5-HT response bell shaped). Prostaglandin D2 did not cause PMNL accumulation. The venular PMNL response to exogenous histamine peaked between 15 min and 1 h, was still elevated at 2 h, and then returned to prechallenge values after 3 h. At all time points, the histamine-induced PMNL accumulation was nearly abolished by i.v. treatment with the polysaccharide **fucoidin** (which blocks rolling but not firm adhesion per se), suggesting that the PMNL response to histamine was due to rolling rather than firm adhesion over the entire 3 h period. At no time point did histamine trigger accumulation of mononuclear leukocytes (MNL). To examine the role of histamine-receptors in the histamine-induced PMNL accumulation (i.e. rolling), the animals were pretreated with diphenhydramine (H1-receptor antagonist), cimetidine, or ranitidine (H2-receptor antagonists). Diphenhydramine alone inhibited the venular PMNL response to histamine by 52%, while both H2-receptor antagonists were completely inactive. However, the combination of cimetidine and diphenhydramine reduced the histamine-induced PMNL rolling by 82%. Furthermore, in contrast to an H3-receptor agonist, challenge with either the H1-receptor agonist 2-thiazolylethylamine or 2 different H2-receptor agonists (impromidine, dimaprit) was sufficient to provoke venular PMNL accumulation. Treatment with the **nitric oxide** -synthase inhibitor L-NAME did not affect the histamine-induced PMNL

rolling. 3 H pretreatment with dexamethasone reduced the PMNL response to histamine by 73%, and flow cytometric anal. showed that the dexamethasone treatment almost completely inhibited binding of sol. P-selectin to rat isolated PMNLs. Thus, initial leukocyte recruitment after mast cell activation in the rat mesentery is critically dependent on histamine release. The cellular response to histamine was due to PMNL rolling, involved activation of both H1- and H2-receptors, and lasted for 2-3 h. Moreover, the histamine-induced PMNL rolling was not dependent on **nitric oxide** synthesis, but was sensitive to glucocorticoid treatment, possibly via inhibition of expression or function of leukocyte P-selectin ligand(s).

ST histamine leukocyte rolling microcirculation mesentery

IT Histamine receptors
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(H1, H1; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Histamine receptors
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(H2; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Selectins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(P-; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Leukocyte
(adhesion; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT **Inflammation**
(allergic, immediate-type; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Blood vessel
(endothelium; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Mast cell
(histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Glucocorticoids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Cell adhesion
(leukocyte; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Circulation
(microcirculation, mesenteric; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Mesentery
(microcirculation; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT Leukocyte
(rolling; histamine and histamine receptors role in leukocyte-endothelial interactions in microcirculation of mesentery)

IT 50-67-9, 5-Hydroxytryptamine, biological studies 51-45-6, Histamine, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(histamine and histamine receptors role in leukocyte-endothelial

interactions in microcirculation of mesentery)

L89 ANSWER 20 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1998:94790** HCAPLUS
DN **128:204354**
TI **Foods** containing **fucoidan**, polysaccharides, and organogermanium compound for cancer immunotherapy
IN Sokabe, Tsutomu
PA Sokabe, Tsutomu, Japan; Matoba, Junji
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A23L001-30
ICS A23L001-30; A61K031-28; A61K031-555; A61K031-715; A61K035-80; A61K035-84
CC 18-4 (Animal **Nutrition**)
Section cross-reference(s): 1
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10033142	A2	19980210	JP 1996-225814	19960724
PRAI JP 1996-225814		19960724		

AB The title **foods** contain U-**fucoidan** (apoptosis inducer), D fraction (immunostimulant), .beta.-glucan (immunostimulant), (GeCH2CH2CO2H)2O3 (interferon inducer, endorphin enhancer, etc.), and other polysaccharides. The active ingredients show synergistic anticancer activity (no data).
ST **fucoidan** polysaccharide organogermanium **food** anticancer immunostimulant; D fraction beta glucan **food** anticancer; apoptosis inducer **fucoidan food** anticancer synergistic; interferon inducer endorphin enhancer organogermanium **food**; cancer immunotherapy **fucoidan** polysaccharide organogermanium
IT **Food**
Immunostimulants
(**foods** contg. **fucoidan**, polysaccharides, and organogermanium compd. for cancer immunotherapy)
IT Apoptosis
(inducer; **foods** contg. **fucoidan**, polysaccharides, and organogermanium compd. for cancer immunotherapy)
IT **Interferons**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inducer; **foods** contg. **fucoidan**, polysaccharides, and organogermanium compd. for cancer immunotherapy)
IT Polysaccharides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(mixts. contg. **fucoidan** and organogermanium compd.; **foods** contg. **fucoidan**, polysaccharides, and organogermanium compd. for cancer immunotherapy)
IT Antitumor agents
(synergistic; **foods** contg. **fucoidan**, polysaccharides, and organogermanium compd. for cancer immunotherapy)
IT 60118-07-2, Endorphin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(enhancement of; **foods** contg. **fucoidan**, polysaccharides, and organogermanium compd. for cancer immunotherapy)
IT 9041-22-9D, .beta.-Glucan, mixts. contg. **fucoidan**, polysaccharides, and organogermanium compd. **9072-19-9D**, **Fucoidan**, mixts. contg. polysaccharides and organogermanium compd. 179180-23-5D, mixts. contg. **fucoidan** and polysaccharides

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**foods** contg. **fucoidan**, polysaccharides, and organogermanium compd. for cancer immunotherapy)

IT **9072-19-9D**, **Fucoidan**, mixts. contg. polysaccharides and organogermanium compd.
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**foods** contg. **fucoidan**, polysaccharides, and organogermanium compd. for cancer immunotherapy)

RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 21 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 1998:13813 HCAPLUS
DN 128:47606
TI **Fucoidan**-containing **foods** or **beverages**
IN Umeda, Yoshihisa; Kihara, Hiroshi; Ikai, Katsushige; **Kato, Ikunoshin**
PA **Takara Shuzo Co., Ltd., Japan**; Umeda, Yoshihisa; Kihara, Hiroshi; Ikai, Katsushige; Kato, Ikunoshin
SO PCT Int. Appl., 76 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM A23L001-30
ICS A61K035-80; C07H005-10
CC 17-13 (**Food** and **Feed** Chemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9747208	A1	19971218	WO 1997-JP1664	19970515
	W: AU, BG, BR, CA, CN, CZ, HU, JP, KR, MX, NO, NZ, PL, RO, SK, US, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9727898	A1	19980107	AU 1997-27898	19970515
	AU 711896	B2	19991021		
	EP 916269	A1	19990519	EP 1997-922085	19970515
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CN 1221320	A	19990630	CN 1997-195371	19970515
	CN 1081903	B	20020403		
	KR 2000010670	A	20000225	KR 1998-708652	19981028
	US 2002076431	A1	20020620	US 2001-987715	20011115
PRAI	JP 1996-171666	A	19960612		
	JP 1996-318598	A	19961115		
	WO 1997-JP1664	W	19970515		
	US 1998-180465	A1	19981109		

AB **Food** and **beverages** are prepd. that contain **fucoidan** which induces apoptosis. Seaweed contg. **fucoidan** is extd. with calcium chloride or sodium carbonate, and **fucoidan** is isolated.
ST **fucoidan food beverage** apoptosis
IT **Beverages**
Food
(contg. **fucoidan** for apoptosis)
IT Antitumor agents
(**food** contg. **fucoidan** as)
IT **9072-19-9**, **Fucoidan**

RL: **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**foods** or **beverages** contg. apoptosis-inducing)
IT 497-19-8, Sodium carbonate, biological studies 10043-52-4, Calcium chloride, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(in manuf. of **foods** or **beverages** contg. apoptosis-inducing **fucoidan**)
IT **9072-19-9, Fucoidan**
RL: **FFD (Food or feed use)**; THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**foods** or **beverages** contg. apoptosis-inducing)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 22 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1997:79274** HCAPLUS
DN **126:130108**
TI **Nitric oxide** decreases lung injury after intestinal ischemia
AU Terada, Lance S.; Mahr, Nancy N.; Jacobson, Eugene D.
CS University of Colorado Health Sciences Center, Denver, CO, 80262, USA
SO Journal of Applied Physiology (1996), 81(6), 2456-2460
CODEN: JAPHEV; ISSN: 8750-7587
PB American Physiological Society
DT Journal
LA English
CC 14-7 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 2
AB After injury to a primary organ, mediators are released into the circulation and may initiate **inflammation** of remote organs. We hypothesized that the local prodn. of **nitric oxide** (NO) may act to limit the spread of **inflammation** to secondarily targeted organs. In anesthetized rats, 30 min of intestinal ischemia followed by 2 h of reperfusion (I/R) did not increase lung albumin leak. However, after treatment with NG-nitro-L-arginine Me ester (L-NAME), intestinal I/R led to increased lung leak, suggesting a protective effect of endogenous NO. The site of action of NO appeared to be the lung and not the gut because 1) after treatment with L-NAME, local delivery of NO to the lung by inhalation abolished the increase in intestinal I/R-induced lung leak; 2) L-NAME had no effect on epithelial permeability (51Cr-labeled EDTA clearance) of reperfused small bowel; and 3) after treatment with L-NAME, local delivery of NO to the gut by luminal perfusion did not improve epithelial permeability of reperfused intestines. Furthermore, L-NAME increased, and inhaled NO decreased, the d. of lung neutrophils in rats subjected to intestinal I/R, and treatment with the selectin antagonist **fucoidan** abolished L-NAME-induced lung leak in rats subjected to intestinal I/R. We conclude that endogenous lung NO limits secondary lung injury after intestinal I/R by decreasing pulmonary neutrophil retention.
ST **nitric oxide** lung injury intestine ischemia
IT Lung, disease
(injury; **nitric oxide** from neutrophils decreases lung injury after intestinal ischemia)
IT Intestine, disease
(ischemia; **nitric oxide** from neutrophils decreases lung injury after intestinal ischemia)
IT Reperfusion
(**nitric oxide** from neutrophils decreases lung injury after intestinal ischemia)

IT Biological transport
(permeation; **nitric oxide** from neutrophils decreases lung injury after intestinal ischemia)
IT Intestine, disease
(small, ischemia; **nitric oxide** from neutrophils decreases lung injury after intestinal ischemia)
IT **10102-43-9, Nitric oxide**, biological studies
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(**nitric oxide** from neutrophils decreases lung injury after intestinal ischemia)
IT **10102-43-9, Nitric oxide**, biological studies
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(**nitric oxide** from neutrophils decreases lung injury after intestinal ischemia)
RN 10102-43-9 HCAPLUS
CN Nitrogen oxide (NO) (8CI, 9CI) (CA INDEX NAME)

N═O

L89 ANSWER 23 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1997:29068** HCAPLUS
DN **126:73743**
TI Differential inhibition of polymorphonuclear leukocyte recruitment in vivo by dextran sulfate and **fucoidan**
AU Van Osselaer, N.; Rampart, M.; Herman, A. G.
CS Division of Pharmacology, Faculty of Medicine, University of Antwerp (UIA), Wilrijk, B-2610, Belg.
SO Mediators of Inflammation (1996), 5(5), 346-357
CODEN: MNFLEF; ISSN: 0962-9351
PB Rapid Science Publishers
DT Journal
LA English
CC 15-10 (Immunochemistry)
Section cross-reference(s): 14
AB The selectin-mediated rolling of leukocytes along the endothelial cells is a prerequisite step followed by firm adhesion and extravasation into the **inflamed** tissue. This initial contact can be suppressed by sulfated polysaccharides. The authors have studied the effect of sulfated polysaccharides on the ultimate polymorphonuclear leukocyte (PMN) recruitment and plasma leakage in rabbit skin in response to intradermal injection of various **inflammatory** mediators. PMN infiltration evoked by various PMN chemoattractants (fMLP, C5a desArg, LTB4, and **IL**-8) was inhibited after i.v. injection of dextran sulfate (25 mg/kg), heparin (2.times.90 mg/kg), or **fucoidan** (1 mg/kg). PMN-dependent plasma leakage was equally well reduced by the different sulfated polymers. Vascular permeability induced by histamine or thrombin acting via a PMN-independent mechanism was not reduced. **Fucoidan** was the only polysaccharide able to suppress **IL**-1-induced PMN infiltration for 60-70%. Local administration of dextran sulfate had no effect on PMN-dependent plasma leakage. Differential inhibition of PMN recruitment was detd. after injection of dextran sulfate or **fucoidan** depending on the type of insult. Therefore, different adhesion pathways are utilized during PMN recruitment in vivo in response to chemoattractants and **IL**-1.
ST leukocyte recruitment **inflammation** dextran sulfate **fucoidan**

IT Adhesion, biological
Inflammation
Polymorphonuclear leukocyte
(different adhesion pathways are utilized during polymorphonuclear leukocyte recruitment in **inflammation** in response to chemoattractants and **interleukin**-1)
IT **Interleukin 1**
Interleukin 8
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(different adhesion pathways are utilized during polymorphonuclear leukocyte recruitment in **inflammation** in response to chemoattractants and **interleukin**-1)
IT Blood vessel
(endothelium; different adhesion pathways are utilized during polymorphonuclear leukocyte recruitment in **inflammation** in response to chemoattractants and **interleukin**-1)
IT Polysaccharides, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(sulfated; different adhesion pathways are utilized during polymorphonuclear leukocyte recruitment in **inflammation** in response to chemoattractants and **interleukin**-1)
IT 59880-97-6 71160-24-2, LTB4 80295-54-1D, Complement C 5a, dearginine derivs.
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(different adhesion pathways are utilized during polymorphonuclear leukocyte recruitment in **inflammation** in response to chemoattractants and **interleukin**-1)
IT 9005-49-6, Heparin, biological studies 9042-14-2, Dextran sulfate
9072-19-9, Fucoidan
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(different adhesion pathways are utilized during polymorphonuclear leukocyte recruitment in **inflammation** in response to chemoattractants and **interleukin**-1)
IT **9072-19-9, Fucoidan**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(different adhesion pathways are utilized during polymorphonuclear leukocyte recruitment in **inflammation** in response to chemoattractants and **interleukin**-1)
RN 9072-19-9 HCAPLUS
CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 24 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1996:266153** HCAPLUS
DN **124:332302**
TI An experimental study on immunoregulatory effect of **fucoidan**
AU Shun, Juyun; Liu, Xiaohui; Zhang, Jisheng; Zhang, Shaolun; Yang, Xiaolin; Xu, Hannian
CS Norman Bethune University Medical Science, Changchun, 130021, Peop. Rep. China
SO Zhongguo Haiyang Yaowu (1995), 14(3), 990-13
CODEN: ZHYAE8; ISSN: 1002-3461
PB Shandong Haiyang Yaowu Kexue Yanjiuso
DT Journal
LA Chinese
CC 1-7 (Pharmacology)
AB **Fucoidan** promoted splenocyte proliferation induced by mitogen

(Con A, PHA, LPS) and **IL**-1 prodn. of peritoneal macrophage by bacterial lipopolysaccharide (LPS), directly stimulated murine splenocyte to produce **interferon-.gamma.** (**IFN**-. **gamma.**), and enhanced **IL**-2 prodn. of splenocyte induced by Con A, function of T-cell, B-cell, macrophage, and natural killer cell.

ST immunoregulator **fucoidan** lymphocyte macrophage interferon IL2

IT Cell proliferation
Immunomodulators
Macrophage
(immunoregulatory effect of **fucoidan**)

IT Lymphocyte
(B-cell, immunoregulatory effect of **fucoidan**)

IT Lymphocyte
(T-cell, immunoregulatory effect of **fucoidan**)

IT **Lymphokines and Cytokines**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**interleukin 2**, immunoregulatory effect of **fucoidan**)

IT Lymphocyte
(natural killer cell, immunoregulatory effect of **fucoidan**)

IT Spleen
(splenocyte, immunoregulatory effect of **fucoidan**)

IT **Interferons**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**.gamma.**, immunoregulatory effect of **fucoidan**)

IT **9072-19-9, Fucoidan**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(immunoregulatory effect of **fucoidan**)

IT **9072-19-9, Fucoidan**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(immunoregulatory effect of **fucoidan**)

RN 9072-19-9 HCAPLUS

CN Fucoidan (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L89 ANSWER 25 OF 27 HCAPLUS COPYRIGHT 2003 ACS

AN **1994:69152** HCAPLUS

DN **120:69152**

TI Suppression by intradermal administration of heparin of eosinophil accumulation but not edema formation in **inflammatory** reactions in guinea-pig skin

AU Teixeira, M. M.; Hellewell, P. G.

CS Dep. Appl. Pharmacol., Natl. Heart Lung Inst., London, SW3 6LY, UK

SO British Journal of Pharmacology (1993), 110(4), 1496-500
CODEN: BJPCBM; ISSN: 0007-1188

DT Journal

LA English

CC 1-8 (Pharmacology)

AB Heparin is widely used in the treatment of thrombotic disorders and as an aid in surgery. Anti-**inflammatory** effects of heparin have also been described. In this study, the authors have investigated the effects of locally-injected heparin on the edema formation and eosinophil accumulation induced by various **inflammatory** stimuli in guinea-pig skin. Heparin dose-dependently suppressed the accumulation of 111In-labeled eosinophils induced by i.d. injection of zymosan-activated plasma (ZAP). The 111In-eosinophil accumulation induced by other

inflammatory stimuli (compd. 48/80, platelet activating factor, **interleukin**-8 and in a passive cutaneous anaphylaxis reaction) was also suppressed by locally-injected heparin. Edema formation in response to these same stimuli was not altered by the local injection of heparin. **Fucoidin**, a neg.-charged sulfated algal polymer, had no effect on the 111In-eosinophil accumulation or edema formation induced by ZAP. Nevertheless, **fucoidin** significantly suppressed the edema formation induced by i.d. injection of cationic protein-contg. exts. of Schistosoma mansoni larvae. Heparin also inhibited edema induced by the exts., suggesting that both **fucoidin** and heparin were effectively neutralizing the cationic protein of the exts. to inhibit their edema-inducing activity. Thus, heparin significantly inhibited the accumulation of 111In-eosinophils, but not edema formation, induced by various **inflammatory** stimuli. This, taken together with the lack of effect of **fucoidin**, suggests that heparin interferes with the process of eosinophil trafficking by a mechanism that does not depend on neutralization of the charge of the stimulatory mols.

ST heparin edema eosinophil **inflammatory** stimulus skin

IT Eosinophil
Skin
(accumulation of, **inflammatory** stimuli induction of, heparin suppression of, after intradermal administration)

IT **Inflammation**
(edema formation and eosinophil accumulation induced by, in skin, heparin effect on, after intradermal administration)

IT Edema
(formation of, **inflammatory** stimuli induction of, heparin effect on, after intradermal administration)

IT 9005-49-6, Heparin, biological studies
RL: BIOL (Biological study)
(edema formation and eosinophil accumulation induced by **inflammatory** stimuli skin response to, after intradermal administration)

L89 ANSWER 26 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1993:37346** HCAPLUS
DN **118:37346**
TI Selective and differential binding of **interleukin** (**IL**)-1.alpha., **IL**-1.beta., **IL**-2 and **IL**-6 to glycosaminoglycans
AU Ramsden, Lawrence; Rider, Christopher C.
CS R. Holloway and Bedford New Coll., Univ. London, Egham/Surrey, UK
SO European Journal of Immunology (1992), 22(11), 3027-31
CODEN: EJIMAF; ISSN: 0014-2980
DT Journal
LA English
CC 15-5 (Immunochemistry)
AB The binding of **interleukin** (**IL**)-1.alpha., **IL**-1.beta., **IL**-2 and **IL**-6 to acidic polysaccharides was investigated by affinity chromatog. of the recombinant, radioiodinated **interleukins** on columns of immobilized polysaccharide. Each **interleukin** showed selective binding retention. Overall, heparin bound all four **interleukins** significantly, whereas chondroitin sulfate provided little retention. **IL**-1.alpha. and **IL**-1.beta. showed differential binding, with only the latter binding to hyaluronic acid. **IL**-2 was virtually completely retained on **fucoidan**. Noniodinated recombinant **IL**-2 bound similarly to **fucoidan**, and **fucoidan** was found to sequester **IL**-2 activity in a bioassay employing **IL**-2-dependent CTLL cells. In all other cases tested, **interleukin** retention was partial, implying that **interleukin** binding sites are sparsely distributed along the polysaccharide chains. These findings suggest that during the immune response, **interleukins** will tend

to be retained at sites of secretion by interaction with glycosaminoglycans in the extracellular matrix and on cell surfaces.
ST **interleukin** binding glycosaminoglycan
IT Glycosaminoglycans, biological studies
RL: BIOL (Biological study)
(**interleukins** binding to)
IT Molecular association
(of **interleukins** with glycosaminoglycans)
IT Polysaccharides, biological studies
RL: BIOL (Biological study)
(acidic, **interleukins** binding to)
IT **Lymphokines and Cytokines**
RL: PROC (Process)
(**interleukin 1.alpha.**, binding of, to glycosaminoglycans)
IT **Lymphokines and Cytokines**
RL: PROC (Process)
(**interleukin 1.beta.**, binding of, to glycosaminoglycans)
IT **Lymphokines and Cytokines**
RL: PROC (Process)
(**interleukin 2**, binding of, to glycosaminoglycans)
IT **Lymphokines and Cytokines**
RL: PROC (Process)
(**interleukin 6**, binding of, to glycosaminoglycans)
IT 9004-61-9, Hyaluronic acid 9005-49-6, Heparin, biological studies
9042-14-2, Dextran sulfate 24967-93-9, Chondroitin sulfate A
RL: BIOL (Biological study)
(**interleukins** binding to)

L89 ANSWER 27 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN **1992:529793** HCAPLUS
DN **117:129793**
TI GMP-140 (P-selectin/CD62) binds to chronically stimulated but not resting CD4+ T lymphocytes and regulates their production of **proinflammatory cytokines**
AU Damle, Nitin K.; Klussman, Kerry; Dietsch, Mary T.; Mohagheghpour, Nahid; Aruffo, Alejandro
CS Bristol-Myers Squibb Pharm. Res. Inst., Seattle, WA, 98121, USA
SO European Journal of Immunology (1992), 22(7), 1789-93
CODEN: EJIMAF; ISSN: 0014-2980
DT Journal
LA English
CC 15-10 (Immunochemistry)
AB GMP-140, a 140-kDa granular membrane glycoprotein localized to the .alpha. granules of platelets and the Weibel-Palade bodies of endothelial cells, is thought to play an important role in adhesive interactions predominantly between granulocytes, platelets, and vascular endothelial cells during **inflammation**. Although GMP-140 binds to granulocytes, its binding to lymphocytes has not been demonstrated. Using genetically engineered IgG C.gamma.1 fusion protein of the extracellular domains of GMP-140, it is demonstrated that GMP-140 binds to chronically antigen (Ag)-stimulated CD4+ T cells. Freshly isolated CD4+ T cells did not bind GMP-140, but priming and subsequent stimulation with alloantigen induced and gradually increased expression of GMP-140-reactive structures on their surface. T cells isolated from rheumatoid synovial fluids also exhibited strong binding to GMP-140. The binding of GMP-140 to primed T cells is not influenced by preactivation with phorbol **12** -myristate 13-acetate, is almost completely abolished by pretreatment of T cells with neuraminidase or trypsin, and is also strongly inhibited by EDTA, the sol. sulfated glycans dextran sulfate, **fucoidan**, and heparin, but not by chondroitin sulfates. In spite of its strong binding to Ag-primed T cells, GMP-140 did not modulate the proliferative responses

of these cells to various stimuli. However, GMP-140 in conjunction with anti-T cell receptor .alpha..beta. monoclonal antibodies augmented the prodn. of granulocyte-macrophage colony-stimulating factor and inhibited the prodn. of **interleukin**-8 by Ag-primed T cells without influencing their tumor necrosis factor-.alpha. prodn. Thus, GMP-140 binds to chronically stimulated CD4+ T cells and differentially modulates their prodn. of **proinflammatory cytokines**. The ability of Ag-primed T cells to bind GMP-140 may facilitate interactions with activated platelets and endothelial cells affecting the course of **inflammation**.

ST GMP 140 protein T lymphocyte **cytokine**; P selectin lymphocyte **proinflammatory cytokine**

IT **Inflammation**
(T-cell interaction with platelets and endothelial cells in, binding of GMP-140 in relation to)

IT Glycoproteins, biological studies
RL: BIOL (Biological study)
(of T-lymphocyte, as GMP-140 ligands, **inflammation** in relation to)

IT **Lymphokines and Cytokines**
RL: BIOL (Biological study)
(**proinflammatory**, formation of, by CD4-pos. T-cells, GMP-140 binding regulation of)

IT Glycoproteins, specific or class
RL: BIOL (Biological study)
(P-selectins, CD4-pos. T-cell formation of **proinflammatory cytokines** regulation by)

IT Lymphocyte
(T-cell, CD4-pos., **proinflammatory cytokines** formation by, GMP-140 regulation of)

IT **Lymphokines and Cytokines**
RL: FORM (Formation, nonpreparative)
(**interleukin 8**, formation of, by CD4-pos. T-cells, GMP-140 binding regulation of)

IT Arthritis
(rheumatoid, synovial T-cells in human, GMP-140 binding by)

IT 83869-56-1, Granulocyte-macrophage colony-stimulating factor
RL: FORM (Formation, nonpreparative)
(formation of, by CD4-pos. T-cells, GMP-140 binding regulation of)

=> fil reg
FILE 'REGISTRY' ENTERED AT 09:55:49 ON 11 MAR 2003

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 10 MAR 2003 HIGHEST RN 497818-02-7
DICTIONARY FILE UPDATES: 10 MAR 2003 HIGHEST RN 497818-02-7

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

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Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:

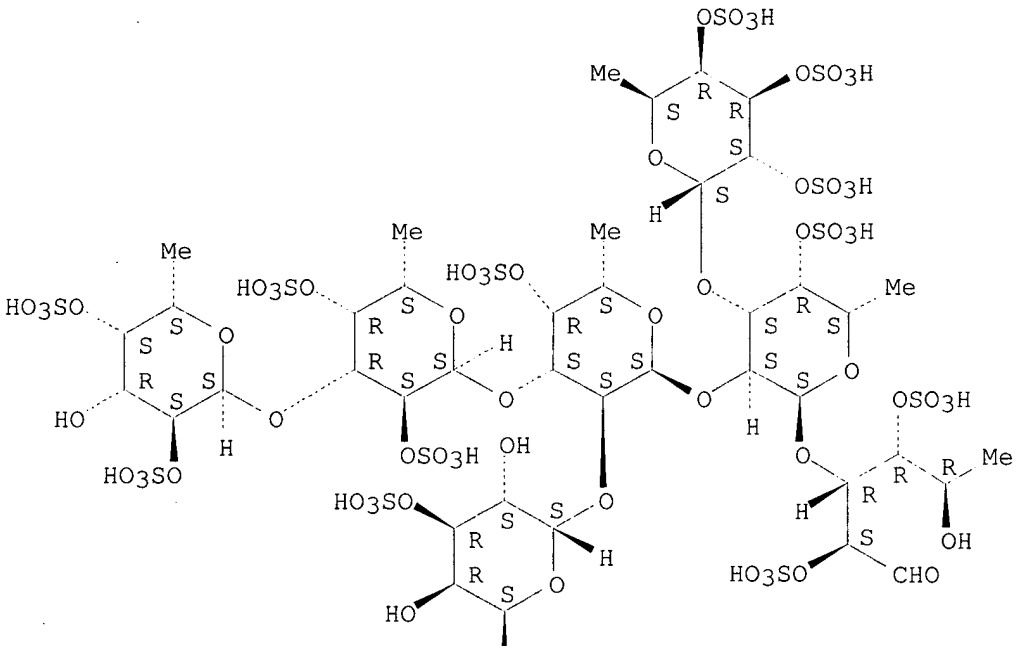
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d l90 ide can

L90 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
RN **328081-45-4** REGISTRY
CN L-Galactose, O-6-deoxy-2,4-di-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-6-deoxy-2,4-di-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[6-deoxy-3-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.2)]-O-6-deoxy-4-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.2)-O-[6-deoxy-2,3,4-tri-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-6-deoxy-4-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-6-deoxy-, 2,4-bis(hydrogen sulfate) (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C42 H72 O65 S12
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1962 TO DATE)
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 134:198038

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     FILE 'HCAPLUS' ENTERED AT 09:53:56 ON 11 MAR 2003

     FILE 'REGISTRY' ENTERED AT 09:55:26 ON 11 MAR 2003
L90           1 S 328081-45-4

     FILE 'HCAPLUS' ENTERED AT 09:55:36 ON 11 MAR 2003
L91           1 S L90

     FILE 'USPATFULL, USPAT2' ENTERED AT 09:55:40 ON 11 MAR 2003
L92           0 S L90

     FILE 'REGISTRY' ENTERED AT 09:55:49 ON 11 MAR 2003

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FILE LAST UPDATED: 10 Mar 2003  (20030310/ED)

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 substance identification.


=> d l91 all hitstr

L91  ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2003 ACS
AN   2001:152496  HCAPLUS
DN   134:198038
TI   Remedies containing fucoidan and/or its decomposition product
IN   Tominaga, Takanari; Yamashita, Syusaku; Mizutani, Shigetoshi; Sagawa,
     Hiroaki; Kato, Ikunoshin
PA   Takara Shuzo Co., Ltd., Japan
SO   PCT Int. Appl., 73 pp.
     CODEN: PIXXD2
DT   Patent
LA   Japanese
IC   ICM  A61K031-737
     ICS  A61K035-80; A61K035-56; A61P037-02; A61P043-00; A61P037-08;
          C08B037-00
CC   63-4 (Pharmaceuticals)
     Section cross-reference(s): 17
FAN.CNT 1
     PATENT NO.       KIND  DATE          APPLICATION NO.  DATE
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PI WO 2001013925 A1 20010301 WO 2000-JP5489 20000817
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
AU 2000065934 A5 20010319 AU 2000-65934 20000817
EP 1226826 A1 20020731 EP 2000-953450 20000817
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL

PRAI JP 1999-234262 A 19990820
JP 2000-69223 A 20000313
WO 2000-JP5489 W 20000817

AB The invention relates to remedies or preventives for diseases with a need for the regulation of the prodn. of cytokines, diseases with a need for the prodn. of nitrogen monoxide or allergic diseases characterized by contg. as the active ingredient fucoidan and/or its decompn. product; and foods, drinks or feeds for regulating the prodn. of cytokines, foods, drinks or feeds for inducing the prodn. of nitrogen monoxide, antiallergic foods, drinks or feeds, etc. contg. fucoidan and/or its decompn. product.

ST fucoidan cytokine regulation disease; antiallergy fucoidan decompn product; nitrogen monoxide disease fucoidan

IT Immunoglobulins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(E, inhibitors; remedies contg. fucoidan and/or its decompn. product)

IT Algae
Echinoderm (Echinodermata)
(fucoidan from; remedies contg. fucoidan and/or its decompn. product)

IT Drug delivery systems
(oral; remedies contg. fucoidan and/or its decompn. product)

IT Allergy inhibitors
Beverages
Feed
Food
Immunosuppressants
(remedies contg. fucoidan and/or its decompn. product)

IT Cytokines
Interferons
Interleukin 12
Interleukins
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(remedies contg. fucoidan and/or its decompn. product)

IT Interferons
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(.gamma.; remedies contg. fucoidan and/or its decompn. product)

IT 10102-43-9, Nitrogen monoxide, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(diseases related to prodn. of; remedies contg. fucoidan and/or its decompn. product)

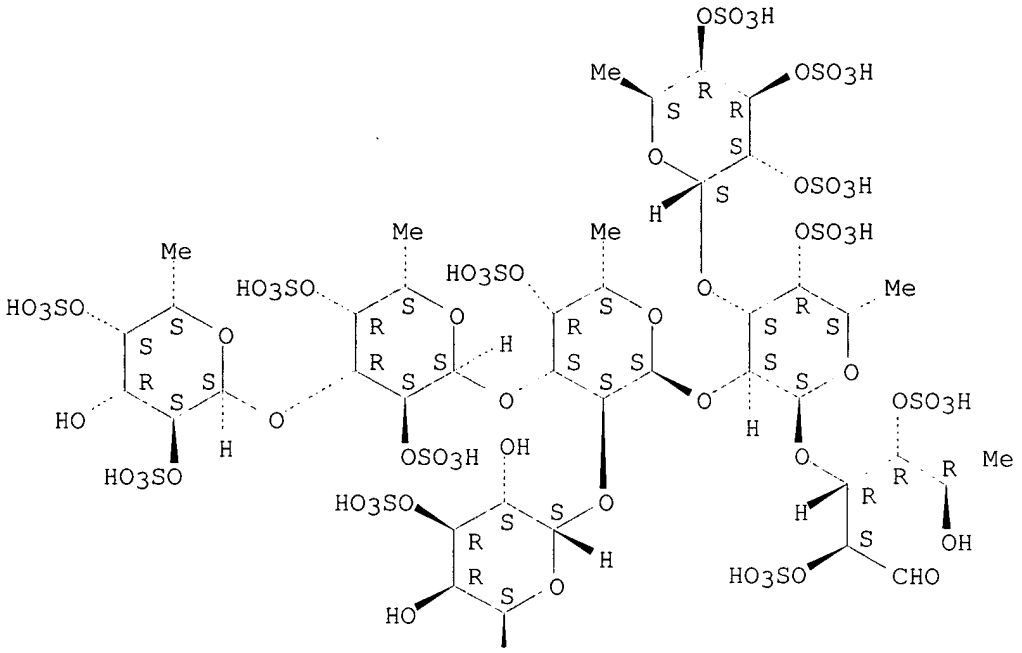
IT **328081-45-4P**
RL: PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(remedies contg. fucoidan and/or its decompn. product)

IT 9072-19-9, Fucoidan
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(remedies contg. fucoidan and/or its decompn. product)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Dainippon Ink And Chemicals Inc; JP 09255577 A 1997 HCAPLUS
(2) Granert, C; Infect Immun 1999, V67(5), P2071 HCAPLUS
(3) Kyodo Nyugyo K K; JP 1072362 A 1998
(4) Shun, J; 1996, V14(3), P990 HCAPLUS
(5) The Australian National Universitay; JP 02502006 A
(6) The Australian National Universitay; JP 09328431 A HCAPLUS
(7) The Australian National Universitay; IL 106354 A1 HCAPLUS
(8) The Australian National Universitay; CA 1316828 A1 HCAPLUS
(9) The Australian National Universitay; AT 160941 E HCAPLUS
(10) The Australian National Universitay; AT 178212 E HCAPLUS
(11) The Australian National Universitay; JP 2701904 B2 HCAPLUS
(12) The Australian National Universitay; EP 355088 A1 HCAPLUS
(13) The Australian National Universitay; EP 355088 B1 HCAPLUS
(14) The Australian National Universitay; US 5541166 A HCAPLUS
(15) The Australian National Universitay; AU 605839 B2 HCAPLUS
(16) The Australian National Universitay; EP 631784 A1 HCAPLUS
(17) The Australian National Universitay; EP 631784 B1 HCAPLUS
(18) The Australian National Universitay; IL 85145 A1 HCAPLUS
(19) The Australian National Universitay; AU 8812410 A1 HCAPLUS
(20) The Australian National Universitay; WO 8805301 A1 1988 HCAPLUS
(21) Yokokawa, K; JOURNAL OF CLINICAL INVESTIGATION 1993, V92(4), P2080 HCAPLUS
IT **328081-45-4P**
RL: PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(remedies contg. fucoidan and/or its decompn. product)
RN 328081-45-4 HCAPLUS
CN L-Galactose, O-6-deoxy-2,4-di-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-6-deoxy-2,4-di-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[6-deoxy-3-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.2)]-O-6-deoxy-4-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.2)-O-[6-deoxy-2,3,4-tri-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-6-deoxy-4-O-sulfo-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-6-deoxy-, 2,4-bis(hydrogen sulfate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A

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MOST RECENT DERWENT UPDATE:     200316        <200316/DW>
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    /BIX is also provided which comprises both /BI and /ABEX <<<

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    GUIDES, PLEASE VISIT:
    http://www.derwent.com/userguides/dwpi_guide.html <<<
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=> d l108 all abeq tech abex tot

L108 ANSWER 1 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2003-058727 [05] WPIX
DNC C2003-015211
TI Lyase for decomposing sulfated fucoglucuronomannan to **fucoidan** fraction and sulfated fucoglucuronomannan oligosaccharides useful in glycotechnology including manufacture of drugs e.g. to treat thrombosis and tumor.
DC B04 D16
IN IKAI, K; **KATO, I**; KIMURA, H; SAKAI, T
PA (TAKA-N) **TAKARA HOLDINGS INC**
CYC 99
PI WO 2002086116 A1 20021031 (200305)* JA 67p C12N009-88
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
ADT WO 2002086116 A1 WO 2002-JP3853 20020418
PRAI JP 2001-155849 20010524; JP 2001-119671 20010418
IC ICM C12N009-88
ICS C07H011-00; C12N001-20; C12P019-04
AB WO 200286116 A UPAB: 20030121
NOVELTY - Sulfated fucoglucuronomannan oligosaccharides or their salts of formula (I) or (II) are new.

DETAILED DESCRIPTION - Sulfated fucoglucuronomannan oligosaccharides or their salts of formula (I) or (II) are new.

R = H or SO3H.

INDEPENDENT CLAIMS are also included for:

(1) a sulfated fucoglucuronomannan lyase characterized by (a) acting on sulfated fucoglucuronomannan of brown seaweed of the Fucales order to cleave and release the alpha -D-mannosyl linkage to generate an oligosaccharide carrying an unsaturated glucuronic acid group; (b) having optimum pH at 6.5-8; and (c) having optimum temperature at 30-40 deg. C;

(2) a process for producing the sulfated fucoglucuronomannan lyase by culturing a microorganism belonging to Fucophilus genus that can produce the enzyme before recovery from the cultured material;

(3) a process for producing sulfated fucoglucuronomannan oligosaccharides of formula (I) or (II), or their salts, by action of the lyase on a brown seaweed of the Fucales order;

(4) a **fucoidan** fraction obtained by action of the lyase on a sulfated polysaccharide mixed fraction originated from the brown seaweed prior to removing sulfated fucoglucuronomannans with reduction in the number of molecules, or collecting a **fucoidan** fraction;

(5) a reagent in glycotechnology containing the sulfated fucoglucuronomannan lyase; and

(6) sulfated fucoglucuronomannans or their salts with the physicochemical properties of (a) containing fucose, mannose and glucuronic acid as the constituting sugars; and (b) molecularly reducible by the sulfated fucoglucuronomannan lyase to form compounds of formula (I) or (II).

ACTIVITY - Cytostatic; anticoagulant; gynecological; antiallergic; immunomodulator.

MECHANISM OF ACTION - None given.

USE - The thus produced fucoglucuronomannan oligosaccharides or **fucoidan** fractions are applicable in glycotechnology including manufacture of drugs to treat thrombosis, tumor, allergy or organ rejection, and to prevent chlamydia adhesion to uterine epithelial cells.

ADVANTAGE - The decomposition is highly reproducible.

Dwg.0/14
FS CPI

FA AB; GI; DCN
MC CPI: B04-C02D; B04-C02X; B04-L06; B07-A02B; B12-K04; B14-F04; **B14-G02A**; B14-G02C; B14-H01; B14-N07C; B14-N14; D05-C03E; D05-C08; D05-H09
ABEX
EXAMPLE - A sulfated polysaccharide mixture obtained from Fucus vesiculosus (brown seaweed) was treated with a crude enzyme solution of Fucophilus fucoidanolyticus ST-1234 strain in 25 mM imidazole hydrochloride buffer of pH 7 at 25 degrees C for 4 days. Sulfated fucoglucuronomannan oligosaccharides were isolated from the fraction with not more than 10,000 molecular weight by DEAE Cellufine A-800 column chromatography then characterized by NMR and MS.

L108 ANSWER 2 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2002-619786 [67] WPIX
DNC C2002-175224
TI **Fucoidin** ester, useful as antiviral immunoregulator, e.g. feed additive for fish, shrimp or pet, immunoregulator vaccine for farm animal or antiviral injection for farm animal and pet.
DC B01 C03 D13
IN TANG, J; WANG, W
PA (TANG-I) TANG J
CYC 1
PI CN 1344565 A 20020417 (200267)* A61K047-36
ADT CN 1344565 A CN 2001-136467 20011019
PRAI CN 2001-136467 20011019
IC ICM A61K047-36
ICS **A61P037-02**
AB CN 1344565 A UPAB: 20021018
NOVELTY - **Fucoidin** ester (I) is new.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for preparation of (I).
ACTIVITY - Antiviral; Immunoregulator.
No biological data available.
MECHANISM OF ACTION - None given in source material.
USE - (I) are used as antiviral immunoregulators, e.g. feed additive for fish, shrimp or pet, immunoregulator vaccine for farm animal or antiviral injection for farm animal and pet.
ADVANTAGE - The technological process is simple, high yield, high purity and easy to realize in industrial production.
Dwg.0/0
FS CPI
FA AB
MC CPI: B04-C02D; B04-F08; B14-A02; B14-G01; **B14-G02**; B14-S11; B14-S12; C04-F08; C14-A02; C14-F02D; C14-G01; **C14-G02**; C14-S11; C14-S12; D03-G01
TECH UPTX: 20021018
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preparation: Preparation of (I), comprises:
(i) extraction of **fucoidin** ester from kelp and other brown algae through the steps of lixiviation, centrifugal separation, reverse osmosis to concentrate, ethanol, precipitation, active carbon decoloring, ultrafiltering to desalt and refining; and
(ii) superfine crushing, vacuum drying and other technological steps.
ABEX
EXAMPLE - None given in source material.

L108 ANSWER 3 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2002-362304 [39] WPIX
DNC C2002-102541
TI Biological homeostasis maintaining agents comprise **fucoidan** or its decomposition product.
DC B04 D13 D21

IN HINO, F; **KATO, I**; MORIHARA, E; NISHIYAMA, E; OYASHIKI, H; **SAGAWA, H**; SAKAI, T
PA (TAKI) **TAKARA SHUZO CO LTD**
CYC 96
PI WO 2002022140 A1 20020321 (200239)* JA 86p A61K031-737
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001088040 A 20020326 (200251) A61K031-737
ADT WO 2002022140 A1 WO 2001-JP7894 20010912; AU 2001088040 A AU 2001-88040 20010912
FDT AU 2001088040 A Based on WO 200222140
PRAI JP 2001-179335 20010613; JP 2000-278712 20000913; JP 2000-295077 20000927; JP 2000-342224 20001109; JP 2000-379313 20001213; JP 2001-128295 20010425
IC ICM A61K031-737
ICS A23K001-16; A23L001-29; A23L002-52; A61K035-80; A61P001-04; A61P001-16; A61P003-06; A61P003-08; A61P031-18; A61P035-00; **A61P043-00**; C08B037-00
AB WO 200222140 A UPAB: 20020621
NOVELTY - Biological homeostasis maintaining agents comprise **fucoidan**, its decomposition product or their salts.
DETAILED DESCRIPTION - Biological homeostasis maintaining agents comprise **fucoidan**, its decomposition product or their salts.
INDEPENDENT CLAIMS are also included for:
(i) food, drinks or feeds which maintain homeostasis and comprise **fucoidan**, its decomposition product or their salts;
(ii) **fucoidan** or marine algae extract prepared by extracting marine algae in the presence of a reductant; and
(iii) foods, drinks, seasonings, feeds, cosmetics and drugs containing the extract from (ii).
ACTIVITY - Hepatotropic; Cardiovascular-Gen.; Antidiabetic; Antilipemic; Anti-HIV; Cytostatic.
In a hydroxyproline induced liver fibrosis model in SD rats **fucoidan** was administered in drinking water at 0.5%. After 5 weeks amount of hydroxyproline in the liver was 336 micro g/g and liver weight was 14.6 g compared to 702 micro g/g and 16.5 g respectively for a control and 164 micro g/g and 13.2 g respectively for normal rats.
MECHANISM OF ACTION - Hypoglycemic; Cholesterol antagonist.
USE - As homeostasis maintaining agents for treating and preventing hepatic disorders (such as hepatic fibrosis), blood consistency disorders (e.g. for lowering blood sugar or cholesterol levels), AIDS related disorders and cancer.
ADVANTAGE - Extracts are less colored and have reduced bitterness, lowered iodine content and fresh feel.
Dwg.0/3
FS CPI
FA AB; DCN
MC CPI: B04-C02D; B04-F08; B14-D02A2; B14-F09; B14-G01; B14-G01B; **B14-G02**; B14-H01; B14-N12; **D03-H01T2**; D08-B09A1
TECH UPTX: 20020621
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Extract: Marine algae is extracted in the presence of ascorbic acid or its salt, erythorbic acid or its salt, cysteine and/or glutathione at 30-130 degrees C for 5 minutes to 32 hours.
ABEX
ADMINISTRATION - Dosage is 0.01-200 mg/kg/day orally (e.g. in foods, drinks, feeds or drugs) or parenterally (e.g. in cosmetics).

EXAMPLE - Dried 'Gagomeconebu' marine algae (4 g) in calcium chloride (100

mmol/l) was extracted at 95 degrees C for 2 hours in the presence of sodium ascorbate (0.50% w/w) to give a **fucoidan** concentration of 1.45 mg/ml compared to 0.89 mg/ml in the absence of sodium ascorbate.

L108 ANSWER 4 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2002-241900 [29] WPIX
DNC C2002-072853
TI Method for inducing, maintaining and extensively culturing antigen-specific cytotoxic T cells sustaining high-level cytotoxicity with e.g. **fucoidan**, useful as extremely safe cell drugs including for application in immunotherapy.
DC B04 D16
IN IDENO, M; **KATO, I; SAGAWA, H**
PA (TAKI) **TAKARA SHUZO CO LTD**
CYC 95
PI WO 2002014481 A1 20020221 (200229)* JA 99p C12N005-08
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001078734 A 20020225 (200245) C12N005-08
ADT WO 2002014481 A1 WO 2001-JP7032 20010815; AU 2001078734 A AU 2001-78734 20010815
FDT AU 2001078734 A Based on WO 200214481
PRAI JP 2000-247072 20000816
IC ICM C12N005-08
ICS A61K035-26; **A61P037-04**
AB WO 200214481 A UPAB: 20020508
NOVELTY - Inducing cytotoxic T cells with antigen-specific cytotoxicity is by incubation of precursor cells capable of differentiation into cytotoxic T cells with antigen-presenting cells in the presence of 1 or more of compounds chosen from acidic polysaccharides, acidic oligosaccharides, acidic monosaccharides and their salts.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) a method for maintaining cytotoxic T cells with antigen-specific cytotoxicity by continuously culturing cytotoxic T cells in the presence of 1 or more of compounds chosen from acidic polysaccharides, acidic oligosaccharides, acidic monosaccharides and their salts;

(2) a method for extensively culturing cytotoxic T cells with antigen-specific cytotoxicity by continuously culturing cytotoxic T cells in the presence of 1 or more of compounds chosen from acidic polysaccharides, acidic oligosaccharides, acidic monosaccharides and their salts;

(3) a method for resolving cytotoxic T cells comprising selection of cell groups containing high cytotoxic T cells with antigen-specific cytotoxicity from the culture containing cytotoxic T cells thus produced;

(4) cytotoxic T cells with antigen-specific cytotoxicity thus produced; and

(5) remedies containing the cytotoxic T cells as active ingredient.

ACTIVITY - Immunomodulator. No biodata is given in the source material.

MECHANISM OF ACTION - Cell therapy.

USE - The method is useful for inducing, maintaining and extensively culturing antigen-specific cytotoxic T cells which are useful as extremely safe cell drugs including for application in adoptive immunotherapy.

ADVANTAGE - The method is safe, and the cultured antigen-specific cytotoxic T cells sustain a high-level cytotoxicity for safe application.

Dwg.0/1
FS CPI
FA AB; DCN
MC CPI: B04-C02; B04-C02D; B04-C02E1; B04-C02E2; B04-C02X; B04-D01; B04-F04;

B07-A02B; B14-G03; D05-C08; D05-H01; D05-H08
TECH UPTX: 20020508
TECHNOLOGY FOCUS - BIOLOGY - Preferred Process: During the process, extensively culturing is carried out in the presence of anti-CD3 antibody as well, particularly together with feed cells such as non-viral-infected cells.
ABEX
SPECIFIC COMPOUNDS - These compounds include **fucoidan**, heparin, alginic acid, chondroitin sulfate A, chondroitin sulfate B, pectic acid, hyaluronic acid, **fucoidan** degradation products, sulfated glucose, sulfated fucose and their salts.

EXAMPLE - Peripheral blood monocytes were isolated then incubated for induction of anti-influenza memory- cytotoxic T lymphocytes (CTL) for 14 days. Cytotoxicity of the cytotoxic T cells was confirmed, and continuous culturing was also carried out.

L108 ANSWER 5 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2002-122201 [16] WPIX
DNC C2002-037443
TI Preventives or remedies for granuloma particularly due to vasoligation, containing an antagonist against a macrophage scavenger receptor e.g. antibody.
DC B04 D16
IN JISHAGE, K; SUZUKI, H
PA (CHUS) CHUGAI SEIYAKU KK
CYC 95
PI WO 2001095938 A1 20011220 (200216)* JA 22p A61K045-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001064286 A 20011224 (200227) A61K045-00
ADT WO 2001095938 A1 WO 2001-JP5082 20010614; AU 2001064286 A AU 2001-64286 20010614
FDT AU 2001064286 A Based on WO 200195938
PRAI JP 2000-185942 20000616
IC ICM A61K045-00
ICS A61K031-711; A61K031-721; A61K031-787; A61K031-795; A61K038-38; A61K039-395; A61P015-00
AB WO 200195938 A UPAB: 20020308
NOVELTY - Preventives or remedies for granuloma contain an antagonist against macrophage scavenger receptor as active ingredient.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:
(1) the use of an antagonist against macrophage scavenger receptor for making preventives or remedies for granuloma; and
(2) a method for preventing or treating granuloma by administering an antagonist against macrophage scavenger receptor to a subject.
ACTIVITY - Cytostatic.
MECHANISM OF ACTION - None given in source material.
USE - The preventives or remedies are useful for treating granuloma particularly due to vasoligation.
DESCRIPTION OF DRAWING(S) - A graph showing the chronological changes in the number of sperm in wild-type mouse and scavenger receptor knockout mouse after vasoligation. (Drawing includes non-English language text).
Dwg.1/2
FS CPI
FA AB; GI; DCN
MC CPI: B04-B04L; B04-C02D; B04-C03D; B04-E06; B04-G04; B04-G21; B04-N02; B14-H01; **B14-L06**; D05-H11A2; D05-H12D2
TECH UPTX: 20020308

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Drugs: Granuloma particularly occurs after vasoligation. The antagonist is especially an antibody for macrophage scavenger receptor, which can be a monoclonal antibody, chimeric antibody, humanized antibody or single-stranded antibody, or is a fragment of any of the antibodies that can bind with macrophage scavenger receptor, or is an antisense nucleic acid against macrophage scavenger receptor; or is a low molecular-weight compound selected from polyvinyl sulfate, polyinosinic acid, polyxanthinylic acid, polyguanylic acid, polyG, I(1:1), dextran sulfate, **fucoidin**, carragheenan, bovine sulfatides, maleylated low density lipid and maleylated albumin.

ABEX

ADMINISTRATION - Administration is oral or non-oral, particularly by injection e.g. intravenous at 1-300 mg daily.

EXAMPLE - Testes of male scavenger receptor A(SR-A) knock-out mouse and wild-type mouse after vasoligation were removed for in vitro testing with use of e.g. a monoclonal antibody against 2F8:mouse SR-A, and the amount of sperm produced per testis in weight was measured and compared, with similar sperm production and inhibition of the formation of granuloma in corpus epididymis and cauda epididymis.

L108 ANSWER 6 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2002-017727 [02] WPIX
DNC C2002-005172
TI Use of **fucoidin**, optionally in combination with an antibiotic agent, for treating arthritis, e.g. septic arthritis or rheumatoid arthritis.
DC B04
IN TARKOWSKI, A; VERDRENGH, M
PA (SAHL-N) SAHLTECH I GOETEBORG AB
CYC 22
PI WO 2001082936 A1 20011108 (200202)* EN 31p A61K031-737
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
W: CA NO US
ADT WO 2001082936 A1 WO 2001-SE962 20010504
PRAI SE 2000-1631 20000504
IC ICM A61K031-737
ICS A61P029-00
AB WO 200182936 A UPAB: 20020109
NOVELTY - The use of **fucoidin** (a sulfated fucosylated polysaccharide from seaweed), optionally in combination with an antibiotic agent, for treating arthritis is new.

ACTIVITY - Antirheumatic; antiarthritic.

MECHANISM OF ACTION - Selectin antagonist.

P-selectin deficient and control mice were injected intravenously with S.aureus CFU. Mice pretreated with **fucoidin** developed a significantly less severe arthritis during the first 2-3 days after bacterial inoculation. On days 2 and 3 after injection of S.aureus, the mean arthritic score for **fucoidin**-treated mice was 0.6 compared with 1.0 for controls. The number of mice exhibiting clinical signs of arthritis was lower in the **fucoidin** pretreated group during the first 4 days after injection of bacteria.

Histopathological examination of the joints confirmed clinical observations. 8 Days after injection of bacteria, 20% of **fucoidin** pretreated mice exhibited cartilage and bone destruction compared to 57% of control animals. Mean synovial hypertrophy score in the **fucoidin**-pretreated group was 2.3 compared to 3.3 in the control group. None of 6 P-selectin deficient inoculated animals exhibited any histopathological signs of arthritis 3 days after bacterial inoculation, whereas in the control group, 67% displayed synovial hypertrophy and 33% also had cartilage and bone erosion.

Immunohistochemical evaluation was carried out to determine presence

of granulocytes and macrophages in the joints of NMRI and P-selectin deficient mice administered mAb specific for L-selectin prior to bacterial inoculation. No significant differences between groups were noted, indicating that L selectin is not of major importance for extravasation of phagocytic cells into the joints in S.aureus induced arthritis.

USE - For treating arthritis, particularly septic arthritis or rheumatoid arthritis (claimed).

Dwg.0/2

FS CPI
FA AB; DCN
MC CPI: B04-C02D; B14-A01; B14-C06; B14-C09; **B14-L06**
ABEX

ADMINISTRATION - Administration is oral, rectal, by injection or by inhalation. Daily dose of **fucoidin** is preferably 15-50 mg/kg. In the treatment of septic arthritis, the daily dose of antibiotic is 1-40 mg/kg.

L108 ANSWER 7 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2001-455916 [49] WPIX
DNC C2001-137646
TI **Fucoidan**-like polysaccharide composite for use as immunostimulant, antitumor agent and health food, contains dried pulverized powder of fucose and/or galactose obtained from blastema of wakame seaweed.
DC B04 D16
PA (MARU-N) MARUI BUSSAN KK
CYC 1
PI JP 2001181303 A 20010703 (200149)* 15p C08B037-00
ADT JP 2001181303 A JP 2000-52396 20000228
PRAI JP 1999-327333 19991012
IC ICM C08B037-00
ICS A61K031-726; A61K031-737; A61K035-80; **A61P037-04**; **A61P043-00**
AB JP2001181303 A UPAB: 20010831

NOVELTY - A **fucoidan**-like polysaccharide composite, containing fucose and/or galactose obtained by washing blastema of wakame seaweed with sea water or salt water, drying under low temperature and dry pulverizing, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) manufacturing **fucoidan**-like polysaccharide, which involves washing blastema of wakame seaweed with sea water or salt water, the washed blastema is dried by solar process and ground at low temperature, the ground powder is defatted, dried and extracted with water, the extract is dialyzed and dried; and

(2) an immunostimulant comprising **fucoidan**-like polysaccharide as active ingredient.

ACTIVITY - Immunostimulant; cytostatic.

Natural killer cell activity of blastema of wakame seaweed was tested in BALB/c male mouse (6 weeks old). The mouse was administered with a feed containing 2 % of blastema of wakame seaweed for 10 days. The result showed that the feed containing 2 % blastema of wakame seaweed efficiently increased natural killer cell activity and suppressed reduction of immunopotentiation or biophylaxis ability. The increase in natural killer cell activity prevents mutation due to viral infection or chemicals and prevents cancer.

MECHANISM OF ACTION - Macrophage phagocytosis activity enhancer.

USE - As drug, functional foodstuff or health food for use as immunostimulant, antitumor agent as natural killer cell for self-cells which produces mutation with viral infection or chemicals, and suppresses hepatopathy.

ADVANTAGE - The **fucoidan**-like polysaccharide is obtained without deterioration of blastema, hence is rich in vitamins, such as

vitamin A, B1, B2, C and niacin, minerals, such as potassium, calcium, phosphorus and iron. The contents of polysaccharide effectively maintains health by eliminating stress, restraining excitation and improving disease resistant immunity. Fucoses present in polysaccharide composite has natural killer cell activity, hence self-cell which produces mutation with viral infection or chemical is destroyed. The canceration of tissue is prevented in its early stages, hence sick prevention and heath maintenance can be potentiated. The macrophage phagocytosis ability enhancement activity of the composite enables non-specific removal of invading foreign materials. The composite enhances various specific functions of liver metabolism. The washing of blastema by sea water prevents dissolution of active constituents, thereby increasing the yield of polysaccharide. Dwg.0/18

FS CPI
FA AB; DCN
MC CPI: B04-A08; B04-A09; B04-A10; B04-C02; B10-A07; B14-G01; B14-H01; B14-H01B; D05-H13
TECH UPTX: 20010831

TECHNOLOGY FOCUS - BIOLOGY - Preferred Method: The solar dried blastema is rehydrated with water, freeze dried and pulverized. Calcium salt is added to an extract containing alginic acid, calcium alginate is collected and calcium salt is removed by adding dilute hydrochloric acid and dialyzing.

ABEX

ADMINISTRATION - Administered orally at a dose of 0.5-1000, preferably 1-300 mg/day/kg.

EXAMPLE - Blastema of wakame seaweed was cleaned in sea water and extracted. The extract was solar dried for day and night at low temperature until the moisture content was 6.2+/-0.5 %, by weight (wt.%). Subsequently freeze dried and pulverized by using stone mill to obtain powder with grain size of 35-170 mesh size. The obtained powder was added with an ethanol, water and heated at 85-90 degrees C to obtain a concentrate. The concentrate was dried to obtain a **fucoidan**-like polysaccharide. The composite was further added with ethanol and extracted to obtain an yield of 66 %.

L108 ANSWER 8 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2001-432636 [46] WPIX
DNC C2001-130880
TI Cosmetics for use for hair-growth stimulants, food and drinks comprises as the active ingredients substances selected from **fucoidan**, degradation products of this, sulfated monosaccharides and salts of these.
DC B03 B04 D13 D21
IN DEGUCHI, S; **KATO, I**; KOBAYASHI, E; **MIZUTANI, S**; NISHIYAMA, E; **SAGAWA, H**
PA (TAKI) **TAKARA SHUZO CO LTD**; (TAKI) **TAKARA BIO INC**
CYC 94
PI WO 2001039731 A1 20010607 (200146)* JA 71p A61K007-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001016486 A 20010612 (200154) A61K007-00
EP 1234568 A1 20020828 (200264) EN A61K007-00
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
KR 2002067041 A 20020821 (200310) A61K007-48
ADT WO 2001039731 A1 WO 2000-JP8412 20001129; AU 2001016486 A AU 2001-16486 20001129; EP 1234568 A1 EP 2000-979012 20001129, WO 2000-JP8412 20001129; KR 2002067041 A KR 2002-706771 20020527
FDT AU 2001016486 A Based on WO 200139731; EP 1234568 A1 Based on WO 200139731

PRAI JP 2000-306772 20001005; JP 1999-341401 19991130; JP 1999-370004 19991227; JP 2000-82738 20000323; JP 2000-220374 20000721
IC ICM A61K007-00; A61K007-48
ICS A61K007-06
AB WO 200139731 A UPAB: 20021031
NOVELTY - Cosmetics (I) comprising substances selected from **fucoidan**, degradation products of this, sulfated monosaccharides and salts of these.
ACTIVITY - Dermatological; antioxidant; endocrinal general.
Dried **fucoidan** was extracted from sea-weed (konnbu). The obtained **fucoidan** (7g) was dissolved in a buffer solution comprising sodium chloride (50 mM) and 1 % ethanol and purified. The obtained **fucoidan** was dissolved in water, and citric acid was added. The solution was hydrolyzed so as to obtain a degradation product of the **fucoidan**. A 3 % **fucoidan** ethanol solution was applied to male mice. The mice achieved excellent hair growth and good skin health.
MECHANISM OF ACTION - None given.
USE - (I) are for use as ingredients for lotions, emulsions, creams, packs, ointments, bath-shampoos, washing-face or -body shampoos and hair shampoos, food, drinks.
ADVANTAGE - (I) have desirable cosmetological effects on skin such as prevention of skin aging, improving hypersensitive skin, relieving itching.
Dwg.0/1
FS CPI
FA AB; DCN
MC CPI: B04-C02D; B04-C02X; B14-N17; B14-R02; **D03-H01T2**; D08-B03; D08-B09A
TECH UPTX: 20010815
TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred compound : The **fucoidan** comprises a **fucoidan** derivative selected from formulae (I), (II), (III) and (IV).
R = OH or OSO3H ;
n = 1 or more.
The degradation product of the **fucoidan** is represented by general formula (V), (VI) or (VII).
Preferred Cosmetics : The hair-growth stimulants further contain minoxidil and/or capronium chloride. The cosmetics can be applied to e.g. food, drinks.

L108 ANSWER 9 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2001-374426 [39] WPIX
DNC C2001-114341
TI Carbohydrate mixture for use in diabetic food compositions or pharmaceuticals, containing (non-)digestible base carbohydrate modified by coupling with other carbohydrate residue, providing delayed glucose release.
DC B05 D13 D16
IN BOEHM, G; FARWER, S; KLIEM, M; SAWATZKI, G; STAHL, B
PA (NUTR-N) NUTRICIA NV
CYC 40
PI WO 2001033973 A2 20010517 (200139)* DE 24p A23L001-00
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
W: AL AU BR CA CN ID IN JP LT LV MK MX NO NZ PL RO SG SI US ZA
DE 19954233 A1 20010531 (200139) C08B037-00
AU 2001028360 A 20010606 (200152) A23L001-00
EP 1229803 A2 20020814 (200261) DE A23L001-00
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
ADT WO 2001033973 A2 WO 2000-EP11134 20001110; DE 19954233 A1 DE 1999-19954233 19991111; AU 2001028360 A AU 2001-28360 20001110; EP 1229803 A2 EP 2000-993030 20001110, WO 2000-EP11134 20001110
FDT AU 2001028360 A Based on WO 200133973; EP 1229803 A2 Based on WO 200133973

PRAI DE 1999-19954233 19991111
IC ICM A23L001-00; C08B037-00
ICS A23L001-05; A23L001-30; A61K031-715; C08B031-00; C12P019-04
AB WO 200133973 A UPAB: 20010716
NOVELTY - A new carbohydrate (CHT) mixture (I) contains at least one modified CHT (A) or (B), obtained by coupling a conventional nutritional CHT with at least one further CHT, optionally together with at least one non-modified CHT (C).

DETAILED DESCRIPTION - A new carbohydrate (CHT) mixture (I) contains at least one modified CHT (A) or (B), obtained by coupling a conventional nutritional CHT with at least one further CHT, optionally together with at least one non-modified CHT (C). (A) comprises a digestible glucan (as digestible glucose-containing basic structure), to which at least one glucose and/or other CHT residue is coupled. (B) comprises a storage or structure CHT or its low molecular component (as non-digestible basic structure), to which at least one glucose and/or other CHT residue is coupled. The amount of glucose released from (I) in the first 90 minutes of digestion (measured in a pancreatin-based in vivo digestive system) is reduced by 10 % compared with that released from an equal weight of (C) or the non-coupled components of (A) or (B).

ACTIVITY - Antidiabetic; gastrointestinal.

MECHANISM OF ACTION - None given.

USE - The use of (I) is claimed in the nutrition of diabetics or in the production of diabetic foods or pharmaceuticals. The claims also cover a diabetic food or pharmaceutical composition containing (I) as CHT component, specifically where (I) forms 35-60 (especially 41-15) % of a liquid nutritional composition.

ADVANTAGE - (I) provides a reduced postprandial increase in blood glucose levels (due to delayed release of glucose), to give a relatively constant plasma glucose level which can be metabolized as energy source by diabetic despite their insulin deficiency. The prolonged presence of (I) in the large intestine can also stimulate the intestinal microflora and reduce digestion problems.

Dwg.0/1
FS CPI
FA AB; DCN
MC CPI: B04-C02; B10-A07; B12-M10A; B14-F09; B14-S04; **D03-H01T**
TECH UPTX: 20010716
TECHNOLOGY FOCUS - FOOD - Preferred Components: The digestible base component of (A) is starch, amylose, amylopectin or dextrin (or their components); and the non-digestible base component of (B) is fructan, beta-glucan, cellulose, pectin, galacturonan, galactan, galactomannan, beta- or alpha-galacto-oligosaccharide, **fucoidan**, mannan, xylan, xyloglucan, laminarin, chitin, chitosan, hyaluronic acid, chondroitin, proteoglycan, glucurono-oligosaccharide, arabinan, arabinoxylan, arabinogalactan, rhamno-oligosaccharide, xanthan, alginate, agar, carrageenan, hemicellulose, vegetable gum, enzymatically prepared carbohydrate, bacterial carbohydrate, N- or O-glycoprotein oligosaccharide or glycolipid oligosaccharide. (A) or (B) is prepared by enzymatic coupling of the starting CHT's.

Preferred Modified Carbohydrate (A): (A) is a maltodextrin which:
(i) is derivatized using a transglucosidase to form glycosidic bonds with glucose in the alpha1 - 2, alpha1 - 3, alpha1 - 4 or alpha1 - 6 position in a transglycosylation reaction (especially using dextransucrase from Leuconostoc mesenteriodes (EC 2.4.1.24) as transglucosidase and sucrose (preferably in excess) as glucose source);
(ii) is derivatized using beta-galactosidase to form glycosidic bonds with galactose in the beta1 - 3, beta1 - 4 or beta1 - 6 position (especially using lactose and/or melibiose (preferably in excess) as galactose source); or
(iii) has a CGT glucan residue transferred from amylose or amylopectin (derived from starch) onto a free hydroxy group in the C2, C3 or C4 position using cyclomaltodextrin-glucanotransferase CGT (EC 2.4.1.19) from

Bacillus macerans.
Preferred Modified Carbohydrate (B): (B) is a fructan which:
(i) is derivatized using a transglucosidase to form glycosidic bonds with glucose in the alpha1 - 2, alpha1 - 3, alpha1 - 4 or alpha1 - 6 position in a transglycosylation reaction (especially using transglycosidase from Aspergillus niger (EC 2.4.1.24) and maltose (preferably in excess) as glucose source); or
(ii) has a CGT glucan residue transferred from amylose or amylopectin (derived from starch) onto a free hydroxy group in the C2, C3 or C4 position using cyclomaltodextrin-glucanotransferase CGT (EC 2.4.1.19) from Bacillus macerans.

ABEX
EXAMPLE - A mixture of 20 g sucrose, 100 g malodextrins (water-soluble low molecular amylose of various chain lengths) and 500 ml 20 mM acetate buffer (pH 5.2) was incubated with 2000 U of dextransucrase from Leuconostoc mesenteriodes (EC 2.4.1.24) for 5 hours at 37 degrees C, so that at least one of the glucose residues of sucrose was transferred into the maltodextrin units. After denaturation of the enzyme for 5 minutes at 100 degrees C, the obtained glucose-modified maltodextrin was purified and recovered by ultrafiltration.

L108 ANSWER 10 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2001-349071 [37] WPIX
DNC C2001-108349
TI Non-ulcer dyspepsia foodstuff for use as health food, such as fermented milk, confectioneries, carbonated beverages, noodles, soybean milk, soup, coffee and ice creams, contains **fucoidan** extracted from brown algae.
DC D13
PA (HONS) YAKULT HONSHA KK
CYC 1
PI JP 2001095528 A 20010410 (200137)* 8p A23L001-30
ADT JP 2001095528 A JP 1999-272232 19990927
PRAI JP 1999-272232 19990927
IC ICM A23L001-30
ICS A23L002-38; A23L002-52
ICA A61K031-715; A61K035-78; A61K035-80; A61P001-04
AB JP2001095528 A UPAB: 20010704
NOVELTY - Non-ulcer dyspepsia foodstuffs contains **fucoidan** extracted from a brown algae.
USE - As foodstuffs for non-ulcer dyspepsia symptoms (claimed). For use as health food such as fermented milk, lactic acid bacteria drink, milk drink, butter, cheese, soup, carbonated beverages, ice creams, other dairy products, fruit drink, black tea, coffee, isotonic drink, non-sugar tea, cocoa, shiruko (sweet red-bean soup), fermented rice drink, refreshing drinks, soybean milk, noodles, tofu, fresh confectionery, tablet confectionery, confectionery, iced confectionery, granule and capsule.
ADVANTAGE - The non-ulcer dyspepsia foodstuffs have no side effects and can be ingested easily. Drink which contained **fucoidan** extracted from mozuku seaweed, and extracts of hub tea, persimmon tea, Hottuynia cordata and/or fennel, was taken by 20 persons with gastric tone (non-ulcer dyspepsia symptom), 4 times a day. The gastric tone symptom was efficiently improved by the drink containing **fucoidan** extract, when compared with a placebo group.
Dwg.0/1
FS CPI
FA AB
MC CPI: D03-H01G; **D03-H01T2**
TECH UPTX: 20010704
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Foodstuff: The foodstuff further comprises plant extracts such as hub tea, persimmon leaf, Hottuynia cordata and/or fennel, preferably tea extract.

ABEX

EXAMPLE - Mozuku seaweed was added with aqueous hydrochloric acid solution (2 mole), and heated for 60 minutes, to elute **fucoidan**. The elute was centrifuged. 1M sodium hydroxide was added, and the concentrated liquid was spray-dried to obtain a powder with 75% of **fucoidan** content. 30-100 g of hub tea, persimmon tea, Hottuynia cordata and/or fennel, were added to 1 kg of ion exchange water at 90degreesC. Extraction was performed for 10 minutes, filtered, and cooled to 30degreesC, to obtain a drink for non-ulcer dyspepsia symptoms.

L108 ANSWER 11 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2001-234976 [24] WPIX
DNC C2001-070366
TI Agents for preventing or treating diseases requiring the regulation of the production of cytokines comprise **fucoidan** or its decomposition product.
DC B05 D13
IN **KATO, I; MIZUTANI, S; SAGAWA, H; TOMINAGA, T; YAMASHITA, S**
PA (TAKI) **TAKARA SHUZO CO LTD**
CYC 94
PI WO 2001013925 A1 20010301 (200124)* JA 73p A61K031-737
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000065934 A 20010319 (200136) A61K031-737
EP 1226826 A1 20020731 (200257) EN A61K031-737
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
KR 2002031411 A 20020501 (200270) A61K031-737
ADT WO 2001013925 A1 WO 2000-JP5489 20000817; AU 2000065934 A AU 2000-65934 20000817; EP 1226826 A1 EP 2000-953450 20000817, WO 2000-JP5489 20000817; KR 2002031411 A KR 2002-702220 20020220
FDT AU 2000065934 A Based on WO 200113925; EP 1226826 A1 Based on WO 200113925
PRAI JP 2000-69223 20000313; JP 1999-234262 19990820
IC ICM A61K031-737
ICS A61K035-56; A61K035-80; **A61P037-02; A61P037-08; A61P043-00**
ICA C08B037-00
ICI C08B037:00
AB WO 200113925 A UPAB: 20010502
NOVELTY - Agents for preventing or treating diseases requiring the regulation of the production of cytokines, diseases requiring the production of nitric oxide or allergic diseases comprise **fucoidan** and/or its decomposition product.

DETAILED DESCRIPTION - Agents for preventing or treating diseases requiring the regulation of the production of cytokines, diseases requiring the production of nitric oxide or allergic diseases comprise **fucoidan** and/or its decomposition product. INDEPENDENT CLAIMS are also included for foods, drinks or feeds that

(1) regulate the production of cytokines;

(2) induce the production of nitric oxide; or

(3) have antiallergic activity comprising **fucoidan** or its decomposition product.

ACTIVITY - Antiallergic.

MECHANISM OF ACTION - Cytokine-Agonist; Cytokine-Antagonist; Nitric-Oxide-Agonist; Interferon-Agonist-Gamma; Interferon-Antagonist-Gamma; Interleukin-Agonist-12; Interferon-Antagonist-12; IgE-Antagonist.

Wistar rats administered 'gagome' **fucoidan** at 1% in drinking water had blood IgE antibody levels of less than 2-8 compared to

8-64 for a control.
USE - For preventing or treating diseases requiring the regulation of the production of cytokines (preferably interferon- gamma or interleukin-12), diseases requiring the production of nitric oxide or allergic diseases (preferably due to IgE production).
Dwg.0/13
FS CPI
FA AB; DCN
MC CPI: B04-C02D; **B14-G02A**; B14-L01; **B14-L03**; **B14-L06**; **B14-L07**; **D03-H01T2**
TECH UPTX: 20010502
TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Agent: **Fucoidan** is obtained from seaweed and the cytokine is interferon or interleukin (preferably interferon-gamma or interleukin-12).
ABEX
ADMINISTRATION - Dosage is 0.01-2000 mg/kg/day orally or parenterally.

L108 ANSWER 12 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2001-015732 [02] WPIX
CR 2000-558250 [51]
DNC C2001-004178
TI Agents for treating and preventing diseases by inducing growth factor production comprise e.g. acidic polysaccharide or acidic sugar alcohol.
DC B05 D13 D21
IN **KATO, I**; KOBAYASHI, E; LI, T; **MIZUTANI, S**; NISHIMURA, K; NISHIYAMA, E; OHNOGI, H; **SAGAWA, H**; SAKAI, T; WU, H
PA (TAKI) **TAKARA SHUZO CO LTD**
CYC 92
PI WO 2000062785 A1 20001026 (200102)* JA 158p A61K031-737
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000038373 A 20001102 (200107) A61K031-737
EP 1175907 A1 20020130 (200216) EN A61K031-737
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
KR 2002004997 A 20020116 (200249) A61K031-70
CN 1355703 A 20020626 (200263) A61K031-737
JP 2000611921 X 20020723 (200263) A61K031-737
ADT WO 2000062785 A1 WO 2000-JP2432 20000414; AU 2000038373 A AU 2000-38373 20000414; EP 1175907 A1 EP 2000-917309 20000414, WO 2000-JP2432 20000414; KR 2002004997 A KR 2001-712954 20011011; CN 1355703 A CN 2000-809051 20000414; JP 2000611921 X JP 2000-611921 20000414, WO 2000-JP2432 20000414
FDT AU 2000038373 A Based on WO 200062785; EP 1175907 A1 Based on WO 200062785; JP 2000611921 X Based on WO 200062785
PRAI JP 2000-99941 20000331; JP 1999-108067 19990415; JP 1999-108499 19990415; JP 1999-114542 19990422; JP 1999-129163 19990510; JP 1999-142343 19990521; JP 1999-154662 19990602; JP 1999-200982 19990714; JP 1999-275231 19990928; JP 1999-375606 19991228
IC ICM A61K031-70; A61K031-737
ICS A23K001-16; A23L001-29; A23L002-52; A61K007-40; A61K031-7016; A61K031-702; **A61P043-00**
ICA C08B037-00
ICI C08B037:00
AB WO 200062785 A UPAB: 20021001
NOVELTY - Agents for treating and preventing diseases by inducing growth factor production comprises an acidic polysaccharide or its degradation product, acidic oligosaccharide, acidic monosaccharide or an acidic sugar alcohol or their salts.
DETAILED DESCRIPTION - Agents for treating and preventing diseases by

inducing growth factor production comprises an acidic polysaccharide or its degradation product, acidic oligosaccharide, acidic monosaccharide or an acidic sugar alcohol or their salts.

INDEPENDENT CLAIMS are also included for foods, drinks, feeds and cosmetics for inducing the production of growth factor comprising an acidic polysaccharide or its degradation product, acidic oligosaccharide, acidic monosaccharide or an acidic sugar alcohol or their salts.

ACTIVITY - Hepatotropic; Antiinflammatory; Respiratory-Gen.; Nootropic; Cerebroprotective; Antidiabetic; Antiparkinsonian; Ophthalmological.

MECHANISM OF ACTION - Growth-Factor-Agonist; HGF-Agonist; NGF-Agonist; IGF-Agonist. In a cell culture sulfated starch sodium salt at 10 micro g/ml increased human hepatocyte growth factor production by MRC-5 cells by 781%.

USE - For treating and preventing diseases by inducing growth factor production (preferably hepatocyte growth factor, nerve growth factor or insulin derived growth factor) such as hepatitis, liver cirrhosis, fatty liver, nephritis, pneumonia, dementia (such as Alzheimer's disease), cerebral vascular disorders, disorders due to head injury, diabetic complications, Parkinson's disease, and retinal pigmentation disorders.

Dwg.0/2

FS CPI
FA AB; DCN
MC CPI: B04-C02; B04-C02X; B04-H06; B10-A07; B14-F02D1; B14-J01A3; B14-J01A4; B14-K01; B14-L01; B14-N03; B14-N10; B14-N12; B14-S04; D03-G01; **D03-H01T2**; D08-B
TECH UPTX: 20010110

TECHNOLOGY FOCUS - PHARMACEUTICALS - Active Agent: Growth factor production inducer is (i) a sulfated polysaccharide (preferably of seaweed, animal, plant, microbe, fish or synthetic origin, especially **fucoidan**); (ii) sulfated glucose, galactose, xylose, 2-deoxyglucose, tallose or mannose; or (iii) a sulfated oligosaccharide (16 are listed in the claims e.g. sulfated maltose or sulfated dideoxymaltohexaose.

ABEX

ADMINISTRATION - Dosage is 0.01-2000 mg/kg/day orally or parenterally.

L108 ANSWER 13 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2000-681105 [67] WPIX
DNC C2000-207282
TI Compositions to deliver compounds into cells e.g. to treat rheumatoid arthritis, comprise organic halide, targeting ligand and nuclear localization sequence in combination with compound and carrier.
DC A96 B07 D16
IN MCCREERY, T; SADEWASSER, D A; UNGER, E C
PA (IMAR-N) IMARX PHARM CORP
CYC 25
PI EP 1046394 A2 20001025 (200067)* EN 78p A61K009-127
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
ADT EP 1046394 A2 EP 2000-303249 20000418
PRAI US 1999-294623 19990419
IC ICM A61K009-127
ICS A61K048-00; C12N015-88
AB EP 1046394 A UPAB: 20001223

NOVELTY - Compositions for delivering compounds into cells comprise: an organic halide; a targeting ligand; and a nuclear localization sequence in combination with the compound to be delivered.

ACTIVITY - Immunoregulatory; anti-inflammatory; anti-arthritic.

USE - The compositions are used to deliver compounds into cells (claimed), particularly for the treatment of autoimmune disorders and inflammatory conditions such as rheumatoid arthritis. They may also be used to deliver pharmaceuticals, drugs, diagnostic agents, synthetic

organic molecules, peptides, proteins, vitamins, steroids, genetic materials and other bioactive agents e.g. mitotic inhibitors (vinca alkaloids), radiopharmaceuticals (radioactive iodine, phosphorus and cobalt isotopes), hormones (progestins, estrogens, anti-estrogens), anthelmintics, antimalarials, antituberculotics, biologicals (immune sera, antitoxins, antivenoms), rabies prophylactic products, bacterial vaccines, viral vaccines, aminoglycosides, respiratory products (xanthine derivatives, theophylline, aminophylline), thyroid therapeutics (iodine salts, antithyroid agents), cardiovascular products (chelating agents, mercurial diuretics, cardiac glycosides), glucagons, blood products (parenteral iron, hemin, hematoporphyrins and derivatives), targeting ligands (peptides, antibodies, antibody fragments), biological response modifiers (muramyl dipeptide, muramyl tripeptide, microbial cell wall components, lymphokines - bacterial endotoxin e.g. lipopolysaccharide and macrophage activation factor), subunits of bacteria (Mycobacteria, Comebacteria), synthetic dipeptides (N-acetyl-muramyl-L-alanyl-D-isoglutamine), antifungals (ketoconazole, nystatin, griseofulvin, flucytosine, miconazole, amphotericin B), toxins (ricin), immunosuppressants (cyclosporins), antibiotics (beta -lactam, sulfazecin), hormones (growth hormone, melanocyte-stimulating hormone, estradiol, beclomethasone dipropionate, betamethasone, betamethasone acetate, betamethasone sodium phosphate, betamethasone disodium phosphate, cortisone acetate, dexamethasone, dexamethasone acetate, dexamethasone sodium phosphate, flunisolide, hydrocortisone, hydrocortisone acetate, hydrocortisone cypionate, hydrocortisone sodium phosphate, hydrocortisone sodium succinate, methylprednisolone, methylprednisolone acetate, methylprednisolone sodium succinate, paramethasone acetate, prednisolone acetate, prednisolone sodium phosphate, prednisolone tebutate, prednisone, triamcinolone, triamcinolone acetonide, triamcinolone diacetate, triamcinolone hexacetonide, fluorocortisone acetate, oxytocin, vasopressin and their derivatives), vitamins (cyanocobalamin neionic acid), retinoids and their derivatives (retinal palmitate, alpha -tocopheryl), peptides and enzymes (manganese superoxide dismutase, alkaline phosphatases), anti-allergens (amelexanox), anticoagulants (phenprocoumon, heparin), tissue plasminogen activators, streptokinase and urokinase), circulatory drugs (propranolol), metabolic potentiators (glutathione), antibiotics (p-aminosalicylic acid, isoniazid, capreomycin sulfate, cycloserine, ethambutol hydrochloride, ethionamide, pyrazinamide, rifampicin, streptomycin sulfate dapsone, chloramphenicol, neomycin, ceflacor, cefadroxil, cephalexin, cephadrine erythromycin, clindamycin, lincomycin, amoxicillin, ampicillin, bacampicillin, carbenicillin, dicloxicillin, cyclacillin, picloxicillin, hetacillin, methicillin, nafcillin, oxacillin, penicillin (G and V), ticarcillin, rifampin, tetracycline), antivirals (acyclovir, ddI, foscarnet, zidovudine, ribavirin, vidarabine monohydrate), antianginals (diltiazem, nifedipine, verapamil, erythritol tetranitrate, isosorbide dinitrate, nitroglycerin (glyceryl trinitrate), pentaerythritol tetranitrate, anti-inflammatories (difluisal, ibuprofen, indomethacin, meclofenamate, mefenamic acid, naproxen, oxyphenbutazone, phenylbutazone, piroxicam, sulindac, tolmetin, aspirin, salicylates), antiprotozoans (chloraquine, hydroxychloraquine, metronidazole, quinine, meglumine antimonate), antirheumatics (penicillamine), narcotics (paregoric), opiates (codeine, heroin, methadone, morphine, opium), cardiac glycosides (deslanoside, digitoxin, digoxin, digitalin, digitalis), neuromuscular blockers (atracurium mesylate, gallamine triethiodide, hexafluorenium bromide, metrocurine iodide, pancurium bromide, succinylcholine chloride (suxamethionium chloride), tubocurarine chloride, vencuronium bromide), sedatives (amobarbital, amobarbital sodium, aprobarbital, butabarbital sodium, chloral hydrate, ethchlorvynol, ethinamate, flurazepam hydrochloride, glutethimide, methotrimeprazine hydrochloride, methyprylon, midazolam hydrochloride, paraldehyde, pentobarbital, pentobarbital sodium, secobarbital sodium, thiopental sodium), antineoplastics (methotrexate, fluorouracil, adriamycin, mitomycin, ansamitomycin, bleomycin, cysteine arabinoside, arabinosyl

adenine, mercaptopolylysine, vincristine, busulfan, chlorambucil, azidothymidine, melphalan (e.g. PAM, L-PAM or phenylalanine mustard), mercaptopurine, mitotane, procarbazine hydrochloride, dactinomycin (actinomycin D), daunorubicin hydrochloride, dosorubicin hydrochloride, Taxol (RTM: paclitaxel), plicamycin (mithramycin), aminoglutethimide, estramustine phosphate sodium, flutamide, leuprolide acetate, megestrol acetate, tamoxifen citrate, testolactone, trilostane, amsacrine (m-AMSA), asparaginase, etoposide (VP-16), interferon alpha -2a, interferon alpha -2b, teniposide (VM-26), vinblastine sulfate (VLB), vincristine sulfate, hydroxyurea, procarbaxine or dacarbazine).

ADVANTAGE - The compositions provide improved delivery of compositions including drugs and genetic materials into cells. They provide for specific targeting and delivery of compounds to particular cells and increased targeting to the nuclei of targeted cells. They also allow delivery to cell lines that would be otherwise resistant to intracellular delivery and gene expression using other conventional means.

DESCRIPTION OF DRAWING(S) - Schematic representation of a targeted composition.

targeted composition 1
lipid coating 2
lipids 2A
halocarbon gas or liquid 3
genetic material 4
targeting ligand 5
lipid head group 6
tether 7
tether 7A
nuclear localization sequence 8
condensing agent. 9

Dwg.2/2

FS CPI

FA AB; GI; DCN

MC CPI: A12-V01; B04-B04D; B04-E02D; B04-E06; B04-E07; B04-G01; B04-H01; B04-J01; B04-K01V; B14-A01; B14-A02; B14-A03; B14-A04; B14-B03; B14-C03; B14-C09B; B14-F01; **B14-G02A**; B14-G02D; B14-L01; B14-S11; D05-C10; D05-C12; D05-H12B; D05-H12D2; D05-H12D4; D05-H12D5

TECH UPTX: 20001223

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred organic halide - The organic halide is a gaseous or liquid organic halide, preferably a liquid or a gaseous precursor. The organic halide is a fluorinated compound, preferably a perfluorinated compound, more preferably a perfluorocarbon, especially a perfluoroether compound. The organic halide is 1-bromo-nonafluorobutane, perfluorooctyliodide, perfluorooctylbromide, 1-chloro-1-fluoro-1-bromomethane, 1,1,1-trichloro-2,2,2-trifluoroethane, 1,2-dichloro-2,2-difluoroethane, 1,1-dichloro-1,2-difluoroethane, 1,2-dichloro-1,1,3-trifluoropropane, 1-bromoperfluorobutane, 1-bromo-2,4-difluorobenzene, 2-iodo-1,1,1-trifluoroethane, 5-bromovalerylchloride, 1,3-dichlorotetrafluoroacetone, bromine pentafluoride, 1-bromo-1,1,2,3,3,3-hexafluoropropane, 2-chloro-1,1,1,4,4,4-hexafluoro-2-butene, 2-chloropentafluoro-1,3-butadiene, iodotrifluoroethylene, 1,1,2-trifluoro-2-chloroethane, 1,2-difluorochloroethane, 1,1-difluoro-2-chloroethane, 1,1-dichlorodifluoromethane, dibromofluoromethane, chloropentafluoroethane, bromochlorodifluoromethane, dichloro-1,1,2,2-tetrafluoroethane, 1,1,1,3,3-pentafluoropentane, perfluorotributylamine, perfluorotripropylamine, 3-fluorobenzaldehyde, 2-fluoro-5-nitrotoluene, 3-fluorostyrene, 3,5-difluoroaniline, 2,2,2-trifluoroethylacrylate, 3-(trifluoromethoxy)-acetophenone, 1,2,2,3,3,4,4-octafluorobutane, 1,1,1,3,3-pentafluorobutane, 1-fluorobutane, 1,1,2,2,3,3,4,4-octafluorobutane, 1,1,1,3,3-pentafluorobutane, perfluoro-4-methylquinolizidine, perfluoro-N-methyl-decahydroquinone, perfluoro-N-methyl-decahydroisoquinone, perfluoro-N-cyclohexyl-pyrrolidine, perfluoroheptane, perfluorocyclohexane, perfluoromethane

(preferred), perfluoroethane (preferred), perfluoropropane (preferred), perfluorobutane (preferred), perfluoropentane (preferred), perfluorohexane (preferred), perfluoroheptane (preferred), perfluorooctane (preferred), perfluorononane (preferred), perfluorodecane (preferred), perfluorododecane (preferred), perfluoro-2-methyl-2-pentene (preferred), perfluorocyclohexane (preferred), perfluorodecalin (preferred), perfluorododecalin (preferred), perfluoropropylene, perfluorocyclobutane, perfluoro-2-butyne, perfluoro-2-butene, perfluorobuta-1,3-diene, perfluorobutylethyl ether (preferred), bis(perfluoroisopropyl)ether (preferred), bis(perfluoropropyl)ether (preferred), perfluorotetrahydropyran (preferred), perfluoromethyl tetrahydrofuran (preferred), perfluoro-tertiary butyl-methyl ether (preferred), perfluoro-isobutyl-methyl ether (preferred), perfluoro-n-butyl-methyl ether, perfluoro-isopropyl-methyl ether (preferred), perfluoro-n-propyl-methyl ether (preferred), perfluorodiethyl ether (preferred), perfluorocyclopropyl methyl ether (preferred), perfluoromethyl ethyl ether (preferred), perfluorodimethyl ether (preferred), sulfur hexafluoride or selenium hexafluoride.

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred compositions - The compositions further comprises a carrier such as a polymer, lipid, protein or metal ion. The carrier preferably comprises a lipid, more preferably a cationic lipid, especially N-(1-(2,3-dioleoyloxy)propyl)-N,N,N-trimethylammonium chloride. The carrier preferably comprises a polymer, more preferably a polyethylene, polyoxyethylene, polypropylene, pluronic acid or alcohol, polyvinyl, polyvinylpyrrolidone, arabinan, fructan, fucan, galactan, galacturonan, glucan, mannan, xylan, levan, **fucoidan**, carrageenan, galactocarolose, pectin, pectic acid, amylose, pullulan, glycogen, amylopectin, cellulose, carboxylmethylcellulose, hydroxypropylmethylcellulose, dextran, pustulan, chitin, agarose, keratan, chondroitin, dermatan, hyaluronic acid, alginic acid, homopolymer or heteropolymer containing one or more of an aldose, ketose, acid, amine, erythrose, threose, ribose, arabinose, xylose, lyxose, allose, altrose, glucose, mannose, gulose, idose, galactose, talose, erythrulose, ribulose, xylulose, psicose, fructose, sorbose, tagatose, glucuronic acid, gluconic acid, glucaric acid, galacturonic acid, mannuronic acid, guluronic acid, glucosamine, galactosamine or neuraminic acid. The carrier is Lipofectin, Lipofectamine, Transfectace, Transfectam, Cytofectin, dimyristoyloxypropyl-3-dimethylhydroxyethylammonium bromide (DMRIE), dilauryloxypropyl-3-dimethylhydroxyethylammonium bromide (DLRIE), GAP-DLRIE, 1,2-dioleoyloxy-3-(trimethylammonio)propane (DOTAP), dioleoylphosphatidylethanolamine (DOPE), DMEAP, DODMP, dioleoylphosphtadiylcholine (DOPC), DDAB, 2,3-dioleoyloxy-N-(2-(sperminecarboxamidoethyl)-N,N-dimethyl-1-propanaminium trifluoroacetate (DOSPA), EDLPC, EDMPC, DPH, TMADPH, cetyltrimethylammonium bromide (CTAB), lysyl-PE, 3,beta-(N,(N',N'-dimethylaminoethane)carbamoyl)cholesterol (DC-Chol), alanyl cholesterol, DCGS, dipalmitoylphosphatidylethanolamine-5-carboxyspermylamide (DPPES), dicaproylphosphatidylethanolamine (DC PE), 4-dimethylaminopyridine (DMAP), dimyristoylphosphatidylethanolamine (DMPE), dioctadecylamidoglycol spermidine (DOGS), DOFIME, dipalmiotylethylphosphatidylcholine (DPEPC), Pluronic (RTM: polyethylene glycol), Tween (RTM: polysorbate), Brij (RTM: polyoxyethylene glycol), plasmalogen, phosphatidylethanolamine, phosphatidylcholine, glycerol-3-ethylphosphatidylcholine, dimethylammonium propane, trimethylammonium propane, dimethyldioctadecylammonium bromide, sphingolipids, sphingomyelin, lysolipid, glycolipid, sulfatide, glycosphingolipid, cholesterol, cholesterol ester, cholesterol salt, oil, 1,2-dioleoyl-sn-glycerol, N-succinyldioleoylphosphatidylethanolamine, 1,3-dipalmitoyl-2-succinyl-glycerol, 1,2-dipalmitoyl-sn-3-succinylglycerol, palmitoylhomocysteine, 1-hexadecyl-2-palmitoylglycerophosphatidylethanolamine, N,N''-bis(dodecylaminocarbonylmethylene)-N,N'-bis((N,N,N-trimethylammoniumethylaminocarbonylethylene)ethylene diamine tetraiodide,

N,N''-bis(hexad ecylaminocarbonylmethylene)-N,N,N''-tris-N,N,N-trimethylammoniumethylaminocarbonylmethylenediethylenetriamine hexaiodide, N,N'-bis(dodecylaminocarbonylmethylene)-N,N''-bis((N,N,N-trimethylammoniumethylaminocarbonyl-methylene)-cyclohexylene-1,4-diamine-tetraiodide, 1,1,7,7-tetra((N,N,N-tetramethylammoniumethylaminocarbonylmethylene)-3-hexadecylaminocarbonylmethylene-1,3,7-triaazaheptane heptaiodide or N,N,N',N'-tetra-((N,N,N-trimethylammoniumethylaminocarbonylmethylene)-N'-(1,2-dioleoylglycero-3-phosphoethanolaminocarbonylmethylene) diethylene triamine tetraiodide. The carrier comprises a dioleoylphosphatidylethanolamine, fatty acid, lysolipid, phosphatidylcholine, phosphatidylethanolamine, phosphatidylserine, phosphatidylglycerol, phosphatidylinositol, sphingolipid, glycolipid, glucolipid, sulfatide, glycosphingolipid, phosphatidic acid, palmitic acid, stearic acid, arachidonic acid, oleic acid, lipid bearing a polymer, lipid bearing a sulfonated saccharide, cholesterol, tocopherol hemisuccinate, lipid with an ether-linked fatty acid, lipid with an ester-linked fatty acid, polymerized lipid, diacetyl phosphate, stearylamine, cardiolipin, phospholipid with a fatty acid of 6-8C, phospholipid with asymmetric acyl chains, 6-(5-cholesten-3b-yloxy)-1-thio-b-D-galactopyranoside, digalactosyldiglyceride, 6-(5-cholesten-3beta-yloxy)hexyl-6-amino-6-deoxy-1-thio-b-D-galactopyranoside, 6-(5-cholesten-3b)-yloxy)hexyl-6-amino-6-deoxyl-1-thio-alpha-D-mannopyranoside, 12-(((7'-diethylamino-coumarin-3-yl)carbonyl)methylamino)octadecanoic acid, N-(12-(((7'-diethylamino-coumarin-3-yl)carbonyl)methylamino)octadecanoyl)-2-aminopalmitic acid, cholesteryl (4'-trimethyl-ammonio)butanoate, N-succinyldioleoylphosphatidylethanolamine, 1,2-dioleoyl-sn-glycerol, 1,2-dipalmitoyl-sn-3-succinyl-glycerol, 1,3-dipalmitoyl-2-succinylglycerol, 1-hexadecyl-2-palmitoylglycerophosphoethanolamine and/or palmitoylhomocysteine. The carrier comprises a phosphatidylcholine, preferably dioleoylphosphatidylcholi ne, dimyristoylphosphatidylcholine, dipentadecanoylphosphatidylcholine, dilauroylphosphatidylcholine, dipalmitoylphosphatidylcholine or distearoylphosphatidylcholine. The carrier comprises phosphatidylethanolamine, preferably dioleoylphosphatidylethanolamine. The carrier comprises a glycolipid, preferably ganglioside GM1 or GM2. The carrier comprises a lipid bearing a polymer, preferably polyethylene glycol, chitin, hyaluronic acid or polyvinylpyrrolidone, more preferably polyethylene glycol, especially a polyethylene glycol with a molecular weight of 2,000, 5,000 or 8,000. The carrier comprises a phospholipid with asymmetric acyl chains with one acyl chain of about 6 C in length and another of about 12 C in length. The carrier comprises about 82 mole % dipalmitoylphosphatidylcholine, about 8 mole % dipalmitoylphosphatidylethanolamine-polyethylene glycol 5,000 and about 10 mole % dipalmitoylphosphatidic acid. The carrier comprises a surfactant, preferably a fluorosurfactant. The compositions further comprise a telomerase. The compositions further comprise a fusion peptide.

Preferred delivery compound - The compound to be delivered is a pharmaceutical agent, synthetic organic molecule, protein, peptide or genetic material, preferably a mutant gene that encodes a defective receptor chosen from tumor necrosis factor (TNF), gamma interferon (IFN gamma) or interleukin-1 (IL-1), antisense oligonucleotide (that preferably hybridizes to a nucleic acid molecule encoding a protein selected from TNF receptor, IFN gamma receptor or IL-1 receptor) or a ribozyme (a ribozyme that disrupts nucleic acid molecules encoding a protein chosen from TNF receptor, IFN gamma receptor or IL-1 receptor).

Preferred targeting ligand - The targeting ligand is a protein, antibody (fragment), hormone (analog), glycoprotein, lectin, (poly)peptide, amino acid, sugar, saccharide, carbohydrate, vitamin, steroid (analog), cofactor, bioactive agent or genetic material, preferably Sialyl Lewis X (preferred), mucin, hyaluronic acid, LFA-1, VLA-4, fibrinogen, von Willebrand factor, vitronectin, VCAM-1, CD49d/CD29, methyl-alpha-D-mannopyranoside, N-formal peptide, C5a, leukotriene B4, platelet-activating factor, IL-8/NAP-1, CTAP-III, beta-thromboglobulin,

NAP-2, gro/MGSA, ENA-78, MCP-1, MAP-1alpha,beta, RANTES or I-309. Preferred nuclear localization sequence - The nuclear localization sequence is a peptide, protein, receptor, transcription factor or an enzyme, especially influenza virus nucleoprotein, karyophenin beta1, human stat1 gene, m-importin, mouse homolog of nuclear pore targeting complex, hepatitis B virus (HBV) polymerase, glucocorticoids receptor (GlucR), interferon-regulated factors ISGF-3 and GAF, yeast mating switch/HO endonuclease promoter SW15, Drosophila melanogaster morphogen dorsal, nuclear factors NF-kappa and NF-AT, T-ag, c-rel, lamin B2, GrH receptor, c-fos, cofilin, rNFIL-6, NF-ATplc, PICA C-subunit, p42mapk/p44erk1, p90rsk, PKC-alpha, lodestar, v-jun, cyclin B (B-type cyclins), adenovirus 5 E1a protein, xnf7, PwA33, Rb-1, p53, c-myc, PTF1, HMG1/2 and tegument protein pp65 (UL83) of human cytomegalovirus. The nuclear localization sequence is a peptide comprising a defined amino acid sequence.

ABEX

SPECIFIC SEQUENCES - A total of 24 nuclear localization sequences are claimed and all are given in the specification. E.g. Pro-Lys-Lys-Lys-Arg-Lys-Val and Asn-Lys-Ile-Pro-Ile-Lys-Asp.

ADMINISTRATION - Administration may be in combination with ultrasound to the cells (claimed).

L108 ANSWER 14 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 2000-195168 [17] WPIX
DNC C2000-060469
TI Treating a condition associated with glycosaminoglycan associated molecular interaction by administration of ionic compounds.
DC B05
IN GERVAIS, F; GREEN, A M; KISILEVSKY, R
PA (NEUR-N) NEUROCHEM INC; (TOOH) UNIV QUEENS KINGSTON
CYC 87
PI WO 2000006133 A2 20000210 (200017)* EN 108p A61K031-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW
AU 9951894 A 20000221 (200029) A61K031-00
EP 1100487 A2 20010523 (200130) EN A61K031-185
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
US 6310073 B1 20011030 (200172) A61K031-407
US 2002193395 A1 20021219 (200303) A61K031-44
ADT WO 2000006133 A2 WO 1999-IB1473 19990728; AU 9951894 A AU 1999-51894 19990728; EP 1100487 A2 EP 1999-936931 19990728, WO 1999-IB1473 19990728; US 6310073 B1 Provisional US 1998-94454P 19980728, US 1999-362505 19990727; US 2002193395 A1 Provisional US 1998-94454P 19980728, Cont of US 1999-362505 19990727, US 2001-970148 20011002
FDT AU 9951894 A Based on WO 200006133; EP 1100487 A2 Based on WO 200006133; US 2002193395 A1 Cont of US 6310073
PRAI US 1999-362505 19990727; US 1998-94454P 19980728; US 2001-970148 20011002
IC ICM A61K031-00; A61K031-185; A61K031-407; A61K031-44
ICS A01N043-42; A61K031-435; A61K031-47; A61K031-715; A61K038-02
AB WO 200006133 A UPAB: 20000405
NOVELTY - Treating a condition associated with a glycosaminoglycan associated molecular interaction comprises administering an ionic compound (I).

DETAILED DESCRIPTION - Treating a condition associated with a glycosaminoglycan associated molecular interaction (GAMI) comprises administering an ionic compound of formula Q(Y-X+)n (I) or its salt or ester.

Y = anionic group at physiological pH;
Q = a carrier molecule;
X = cationic group; and
n = integer selected such that the biodistribution of the therapeutic compound for an intended target site is not prevented while maintaining activity of the therapeutic compound.

INDEPENDENT CLAIMS are also included for:

(A) a method of modulating interaction between an infectious agent and a glycosaminoglycan comprising administering a therapeutic agent comprising at least one sulfonate group attached to a carrier molecule or its salt or ester (i); and

(B) a packaged pharmaceutical composition for treating a GAMI comprising a container containing (i) and instructions for use.

ACTIVITY - Antibacterial; Virucide

MECHANISM OF ACTION - Glycosaminoglycan-Antagonist.

USE - For treating conditions associated with a glycosaminoglycan associated molecular interaction such as bacterial infection e.g.(Chlamydia trachomatis, Staphylococcus aureus, Pseudomonas aeruginosa, Legionella pneumophila, Bordetella pertussis, and Mycoplasma pneumoniae and viral infection (e.g. infection associated with Herpes viridae such as herpes simplex and cytomegalovirus).

Dwg.0/28

FS CPI
FA AB; DCN
MC CPI: B04-C01; B04-C02; B04-C03; B05-B01G; B06-H; B07-H; B10-A09B; B11-C06; B14-A01; B14-A02; **B14-L06**
TECH UPTX: 20000405

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Molecule: The carrier molecule is a carbohydrate, polymer, peptide, peptide derivative, aliphatic group, alicyclic group, heterocyclic group and/or aromatic group (preferably an aliphatic group).

Preferred Method: GAMI does not include amyloidosis and the interaction with a cell surface. GAMI is associated with a bacterial or viral infection, provided that when the bacterium is Chlamydia trachomatis then (I) is not carrageenan, pentosan polysulfate, **fucoidan**, dextran sulfate, heparin, heparan sulfate or dermatan sulfate and when the viral infection is cytomegalovirus then (I) is not a chondroitin sulfate.

ABEX

SPECIFIC COMPOUNDS - The use of 18 compounds is specifically claimed e.g. 3-amino-1-propanesulfonic acid.

ADMINISTRATION - Dosage is 5-500 mg/kg/day orally, or e.g. by injection.

L108 ANSWER 15 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1999-543942 [46] WPIX
DNC C1999-158979
TI Immuno-potentiating agent to reinforce humoral and cellular immunity for prevention and treatment of infection - contains **fucoidan** as effective ingredient.
DC B04 D13
PA (HONS) YAKULT HONSHA KK
CYC 1
PI JP 11228602 A 19990824 (199946)* 4p C08B037-00
ADT JP 11228602 A JP 1998-41043 19980209
PRAI JP 1998-41043 19980209
IC ICM C08B037-00
ICS A23L001-30; A61K031-725
ICA A61K035-80
AB JP 11228602 A UPAB: 19991116

NOVELTY - Immunopotentiating agent contains **fucoidan** as effective ingredient.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for immunoactivity enriched food containing **fucoidan**.

USE - For prevention and treatment of infection.
ACTIVITY - Immunostimulant. Mouse agmen peyerianum cells were cultivated and **fucoidan** was added and allowed to stand for 7 days. The supernatent liquid was removed and the IgA, IgM and IgG present was determined using ELISA. In mu g/ml, 1000 **fucoidan** produced 1.8 IgA, 9.05 IgM and 1.22 IgG antibodies.
ADVANTAGE - The agent reinforces both humoral and cellular immunity efficiently. It is safe even after continuous administration and has a pleasant flavor.
Dwg.0/0
FS CPI
FA AB
MC CPI: B14-A01; B14-A02; B14-A03; B14-A04; B14-A05; B14-G01; **D03-H01T**

L108 ANSWER 16 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1999-163181 [14] WPIX
DNC C1999-047550
TI Skin activating agents and allergy inhibitory agents - comprise **fucoidan** extracted from marine algae as effective component, exhibit e.g. hyaluronic acid biosynthesis inhibitory activities.
DC B04 D21
PA (LIOY) LION CORP
CYC 1
PI JP 11021247 A 19990126 (199914)* 14p A61K035-80
ADT JP 11021247 A JP 1997-189249 19970630
PRAI JP 1997-189249 19970630
IC ICM A61K035-80
ICS A61K007-00; A61K007-48; A61K031-725; C08B037-00
AB JP 11021247 A UPAB: 19990412
Skin activating agents contain **fucoidan**, as effective component, extracted from one or more of marine algae belonging to Analipus, Nemacystis, Ecklonia, Lessonia, Macrocystis, Fucus, Ascophyllium, and Durvillea genera in Phaeophyceae. Also claimed are allergy inhibitory agents containing **fucoidan**, as effective component, extracted from one or more of marine algae belonging to Analipus, Nemacystis, Ecklonia, Lessonia, Macrocystis, Fucus, Ascophyllium, and Durvillea genera in Phaeophyceae.
USE - The agents show potent hyaluronic acid biosynthesis and hyaluronidase inhibitory activities. The allergy inhibitory agents exhibit excellent histamine releasing inhibitory activity.
Dwg.0/0
FS CPI
FA AB
MC CPI: B04-A08; B04-A10; B14-D07B; **B14-G02A**; B14-L09; B14-N17; D08-B09A

L108 ANSWER 17 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1998-462862 [40] WPIX
DNC C1998-140255
TI Production of highly pure **fucoidan** from cultured Nemacystus decipiens Kuck - by extraction with acid and treatment with e.g. diatomaceous earth.
DC B04 D13 D21
PA (TAKO-I) TAKO M
CYC 1
PI JP 10195106 A 19980728 (199840)* 3p C08B037-00
ADT JP 10195106 A JP 1997-36854 19970113
PRAI JP 1997-36854 19970113
IC ICM C08B037-00
ICA A61K031-725
AB JP 10195106 A UPAB: 19981008
Production of **fucoidan** from cultured Nemacystus decipiens Kuck,

comprises extraction with HCl, H2SO4 or oxalic acid, esp. with lyophilisation, optionally with further purification of crude **fucoidan** by dissolution in BaCl2 solution and treatment with diatomaceous earth.

ADVANTAGE - Low cost production of pure **fucoidan** useful for medicines, healthy foods and cosmetics.

Dwg.0/0

FS CPI
FA AB
MC CPI: B04-C02; B04-F01; **D03-H01T2**; D08-B

L108 ANSWER 18 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1998-460074 [40] WPIX
DNC C1998-139074
TI Improvement in quality of Mozuku extract - comprises treating raw Mozuko or its extract with hydrogen peroxide.
DC B04 D13
PA (HONS) YAKULT HONSHA KK
CYC 1
PI JP 10191940 A 19980728 (199840)* 5p A23L001-337
ADT JP 10191940 A JP 1997-17932 19970116
PRAI JP 1997-17932 19970116
IC ICM A23L001-337
ICS A23L001-221; A23L001-30; A61K035-80
ICA A61K031-715; C08B037-00
AB JP 10191940 A UPAB: 19981008
Improvement in the quality of Mozuku extract containing **fucoidan**, comprises treating raw Mozuku, or its extract, with hydrogen peroxide. Also claimed are: (A) a process as above, followed by purification to remove low molecular weight impurities; and (B) an improved Mozuku extract produced by the above processes.

ADVANTAGE - The process allows the colouration, characteristic odour and taste of Mozuku extract to be removed or reduced.

Dwg.0/0

FS CPI
FA AB; DCN
MC CPI: B04-A07; B04-A10; B04-B02C; B05-C08; D03-H01; D03-H01L; **D03-H01T2**

L108 ANSWER 19 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1998-406047 [35] WPIX
DNC C1998-122260
TI Foods containing **fucoidan**, separated from brown algae - e.g. confectionery, noodles, seasoning, pickles, cans, processed fruits, fish products and diary products, used to promote health.
DC D13
PA (ITAY-I) ITAYA Y
CYC 1
PI JP 10165114 A 19980623 (199835)* 6p A23L001-05
JP 2932170 B2 19990809 (199937) 6p A23L001-05
ADT JP 10165114 A JP 1996-357434 19961206; JP 2932170 B2 JP 1996-357434 19961206
FDT JP 2932170 B2 Previous Publ. JP 10165114
PRAI JP 1996-357434 19961206
IC ICM A23L001-05
ICA A21D002-18; A23B007-10; A23G001-00; A23G003-00; A23G009-02; A23L001-20; A23L001-22; A23L001-325; C08B037-00
AB JP 10165114 A UPAB: 19980904
Foods containing **fucoidan** are new. The **fucoidan** is separated from brown algae and purified.

USE - The foods are typically confectionery, noodles, seasoning, pickles, cans, processed fruits, fish products, diary products, health foods, processed drinks and liquor.

ADVANTAGE - The foods have good flavour, high safety and promote health.
Dwg.0/0
FS CPI
FA AB
MC CPI: **D03-H01T2**

L108 ANSWER 20 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1998-234699 [21] WPIX
DNC C1998-073412
TI Drugs for treatment of allergic diseases - comprising **fucoidan** or analogue prepared from sea weed.
DC B04
PA (KYOD) KYODO NYUGYO KK
CYC 1
PI JP 10072362 A 19980317 (199821)* 4p A61K035-80
ADT JP 10072362 A JP 1996-245441 19960829
PRAI JP 1996-245441 19960829
IC ICM A61K035-80
ICS A61K031-715
AB JP 10072362 A UPAB: 19980528
Drugs for treatment of allergic diseases comprising **fucoidan** or an analogue prepared from sea weed are new.
USE - The drugs can prevent the production of interleukin 4, immunoglobulin E, or histamine from mast cells.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B04-A07F2; B04-A10; B04-D01; B05-C05; B07-A02; **B14-G02A**

L108 ANSWER 21 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1998-172064 [16] WPIX
DNC C1998-055104
TI Cancer therapeutic immune food - comprises U-**fucoidan**, D-fraction, beta-glucan, organic germanium and polysaccharide(s).
DC B04 D13
PA (MATO-I) MATOBA J; (SOGA-I) SOGABE T
CYC 1
PI JP 10033142 A 19980210 (199816)* 4p A23L001-30
ADT JP 10033142 A JP 1996-225814 19960724
PRAI JP 1996-225814 19960724
IC ICM A23L001-30
ICS A61K031-28; A61K031-555; A61K031-715; A61K035-80; A61K035-84
AB JP 10033142 A UPAB: 19980421
Cancer therapeutic immune food is composed of combinations of several components with different pharmaceutical effects for synergism and acceleration of apoptosis and eradication of cancer cells containing U-**fucoidan**, D-fraction, beta -glucan, an organic germanium, and other polysaccharides.
Dwg.0/3
FS CPI
FA AB; DCN
MC CPI: B04-C02; B05-A02; B14-H01; B14-S09; **D03-H01T2**

L108 ANSWER 22 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1998-051945 [05] WPIX
DNC C1998-017767
TI Food and drinks containing **fucoidan** originating from **fucoidan**-containing substances such as seaweed - having apoptosis-inducing effects and being useful for preparing health foods, health drinks having anti-carcinogenic effects, stomach-controlling effects etc..
DC B03 D13 D16

IN IKAI, K; **KATO, I**; KIHARA, H; UMEDA, Y
PA (TAKI) **TAKARA SHUZO CO LTD**; (IKAI-I) IKAI K; (KATO-I) KATO I; (KIHA-I) KIHARA H; (UMED-I) UMEDA Y
CYC 36
PI WO 9747208 A1 19971218 (199805)* JA 76p A23L001-30
RW: AT BE CH DE DK EA ES FI FR GB GR IE IT LU MC NL PT SE
W: AU BG BR CA CN CZ HU JP KR MX NO NZ PL RO SK US VN
AU 9727898 A 19980107 (199820) A23L001-30
EP 916269 A1 19990519 (199924) EN A23L001-30
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
CN 1221320 A 19990630 (199944) A23L001-30
JP 10501425 X 19990824 (199944) A23L001-30
AU 711896 B 19991021 (200002) A23L001-30
KR 2000010670 A 20000225 (200102) A23L001-30
US 2002076431 A1 20020620 (200244) A61K035-80
ADT WO 9747208 A1 WO 1997-JP1664 19970515; AU 9727898 A AU 1997-27898 19970515; EP 916269 A1 EP 1997-922085 19970515, WO 1997-JP1664 19970515; CN 1221320 A CN 1997-195371 19970515; JP 10501425 X WO 1997-JP1664 19970515, JP 1998-501425 19970515; AU 711896 B AU 1997-27898 19970515; KR 2000010670 A WO 1997-JP1664 19970515, KR 1998-708652 19981028; US 2002076431 A1 Cont of WO 1997-JP1664 19970515, Cont of US 1998-180465 19981109, US 2001-987715 20011115
FDT AU 9727898 A Based on WO 9747208; EP 916269 A1 Based on WO 9747208; JP 10501425 X Based on WO 9747208; AU 711896 B Previous Publ. AU 9727898, Based on WO 9747208; KR 2000010670 A Based on WO 9747208
PRAI JP 1996-318598 19961115; JP 1996-171666 19960612
IC ICM A23L001-30; A61K035-80
ICS A61K031-715; A61K047-00; C07H005-10
AB WO 9747208 A UPAB: 19980202
Food or drinks contain apoptosis-inducing **fucoidan** originating from **fucoidan**-containing substances.
USE - The food and drinks containing **fucoidan** are useful for apoptosis-induction and for health foods such as anti-carcinogenic foods and stomach/intestine caring foods.
ADVANTAGE - The **fucoidan** originating from seaweed contains low or little alginic acid, the **fucoidan** does not disturb the original taste, flavour, texture and properties of food. The **fucoidan** is cheap and safe.
Dwg.0/5
FS CPI
FA AB
MC CPI: B07-A02B; B07-A03; B14-E10; B14-H01; D03-H01G; **D03-H01T2**; D05-C

L108 ANSWER 23 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1993-045231 [05] WPIX
DNN N1993-034678 DNC C1993-020417
TI Use of a blocking agent which inhibits leukocyte homing receptor mediated binding - for treating, diagnosing and monitoring e.g. multiple sclerosis.
DC B05 S03
IN GEOFFROY, J; HUANG, K; ROSEN, S; SINGER, M; GEOFFREY, J
PA (REGC) UNIV CALIFORNIA
CYC 17
PI WO 9300919 A1 19930121 (199305)* EN 29p A61K037-00
RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE
W: JP
US 5227369 A 19930713 (199329) 8p A61K031-70
EP 593658 A1 19940427 (199417) EN A61K031-70
R: AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE
JP 07505859 W 19950629 (199534) A61K045-00
EP 593658 B1 19991222 (200004) EN A61K031-70
R: AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE
DE 69230468 E 20000127 (200012) A61K031-70

ADT WO 9300919 A1 WO 1992-US5836 19920713; US 5227369 A US 1991-727280 19910711; EP 593658 A1 EP 1992-915758 19920713, WO 1992-US5836 19920713; JP 07505859 W WO 1992-US5836 19920713, JP 1993-501815 19920713; EP 593658 B1 EP 1992-915758 19920713, WO 1992-US5836 19920713; DE 69230468 E DE 1992-630468 19920713, EP 1992-915758 19920713, WO 1992-US5836 19920713
FDT EP 593658 A1 Based on WO 9300919; JP 07505859 W Based on WO 9300919; EP 593658 B1 Based on WO 9300919; DE 69230468 E Based on EP 593658, Based on WO 9300919
PRAI US 1991-727280 19910711
REP 21Jnl.Ref; EP 153875; EP 184040; US 4294818; US 4618601; US 4752563; US 4818686; US 4839276; US 4935343; US 4948726; US 4994466; US 5036102; US 5089479
IC ICM A61K031-70; A61K045-00
ICS A61K031-715; A61K037-02; A61K038-00; A61K039-395; G01N033-53
AB WO 9300919 A UPAB: 19931119
Treating a demyelinating disease in a patient is claimed, comprising administering a compsn. comprising a carrier and a blocking agent which inhibits lymphocyte homing receptor (LHR)-mediated binding of leukocytes to myelin, the blocking agent being present in an amt. to inhibit LHR-mediated adhesion. The blocking agent may be e.g. mannose-6-phosphate, fructose-1-phosphate, a fragment of **fucoidin** or the phosphomannan monoester core from Hansenula hostii (PPME), Sgp50, Sgp90, an immunoglobulin or an isolated LHR.

Also claimed is a method of blocking LHR-mediated adhesion of leukocytes to myelin in a patient, comprising administering a compsn. comprising a carrier and a blocking agent which inhibits LHR-mediated binding.

USE - The blocking agents selectively bind either LHR or the recognition determinant on myelin. They can be used in the diagnosis and treatment of demyelinating diseases such as multiple sclerosis (MS), acute disseminated encephalomyelitis, acute necrotising haemorrhagic encephalomyelitis and HIV associated myelopathy.

Dwg.0/0
FS CPI EPI
FA AB; DCN
MC CPI: B04-B04A6; B04-B04C6; B04-C02; B05-B01P; B12-C10; B12-E01; B12-E02; **B12-G01**
EPI: S03-E14H4
ABEQ US 5227369 A UPAB: 19931116
Treating the demyelmating effect comprises admin. of a compsn. comprising a protein blocking agent which inhibits LHR-mediated binding of leukocytes to myelin and inhibits adhesion. Blocking agent comprises an extracellullar region of an endothelial cell surface glycoprotein or an immunoglobulin.

USE/ADVANTAGE - Used for treating and diagnosing demyelimating disease e.g. multiple sclerosis.

Dwg.0/0

L108 ANSWER 24 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1992-249859 [30] WPIX
CR 1988-021447 [03]; 1990-083347 [11]; 1990-099223 [13]; 1991-266907 [36]; 1991-267279 [36]; 1992-307822 [37]; 1992-390086 [47]; 1993-377394 [47]; 1994-255250 [31]; 1994-332830 [41]; 1996-049424 [05]; 1996-057710 [06]; 1997-076903 [07]
DNC C1992-111476
TI Targetting of therapeutic agents using polysaccharide(s) - by forming complex of therapeutic agent with polysaccharide which interacts with cell receptor so complex is internalised into cells by RME.
DC B04 D16
IN GROMAN, E V; JOSEPHSON, L; JUNG, C; LEWIS, J M
PA (ADMA-N) ADVANCED MAGNETICS INC
CYC 18
PI WO 9211037 A2 19920709 (199230)* EN 19p A61K047-48

RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE
W: CA JP NO
EP 563249 A1 19931006 (199340) EN A61K047-48
R: AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE
JP 06503347 W 19940414 (199420) A61K047-48
ES 2059299 T1 19941116 (199501)
WO 9211037 A3 19920806 (199511)
EP 563249 B1 19970423 (199721) EN 11p A61K047-48
R: AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE
DE 69125848 E 19970528 (199727) A61K047-48
ES 2059299 T3 19971001 (199746) A61K047-48
CA 2097589 C 19980505 (199829) A61K047-48
JP 3357362 B2 20021216 (200302) 8p A61K047-48

ADT WO 9211037 A2 WO 1991-US9368 19911213; EP 563249 A1 WO 1991-US9368 19911213, EP 1992-902979 19911213; JP 06503347 W WO 1991-US9368 19911213, JP 1992-503177 19911213; ES 2059299 T1 EP 1992-902979 19911213; EP 563249 B1 WO 1991-US9368 19911213, EP 1992-902979 19911213; DE 69125848 E DE 1991-625848 19911213, WO 1991-US9368 19911213, EP 1992-902979 19911213; ES 2059299 T3 EP 1992-902979 19911213; CA 2097589 C CA 1991-2097589 19911213; JP 3357362 B2 WO 1991-US9368 19911213, JP 1992-503177 19911213

FDT EP 563249 A1 Based on WO 9211037; JP 06503347 W Based on WO 9211037; ES 2059299 T1 Based on EP 563249; EP 563249 B1 Based on WO 9211037; DE 69125848 E Based on EP 563249, Based on WO 9211037; ES 2059299 T3 Based on EP 563249; JP 3357362 B2 Previous Publ. JP 06503347, Based on WO 9211037

PRAI US 1990-630017 19901219

REP No-SR.Pub; 8.Jnl.Ref; EP 281809; WO 9001295

IC ICM A61K047-48
ICS A61K045-00; A61K047-36; A61P015-00; A61P031-12; **A61P043-00**

AB WO 9211037 A UPAB: 20030111
Targetting a therapeutic agent to a specific population of cells comprises forming a complex of the therapeutic agent with a polysaccaride capable of interacting with a cell receptor and allowing the complex to be internalised into the cells by receptor mediated endocytoxis.

Before degradation or modification, the polysaccharide has mol. wt of over 1,000 D. First step includes modifying a first polysaccharide (pref. by degradation) constituting a second polysaccharide which can interact with a cell receptor, and forming a complex of the therapeutic agent with the second polysaccharide. Pref. the polysaccharide is arabinogalactan (ag.) mannan or **fucoidan**. Pref. combinations of polysaccharide and therapeutic agent are arabinogalactan and Fe, arabinogalactan and methotrexate, arabinogalactan and folic acid, arabinogalactan and ara A-phosphate, arabinogalactan and 6 alpha-methylprednisoloe and arabinogalactan and trifluorothymidine.

Colloidal FeO coated with arabinogalactan was prepd as arabinogalactan is cleared by the asialoglycoprotein receptor of hepatocytes. The presence of injected Fe in the liver and not in the spleen indicates that targetting of Fe to hepatocytes has been achieved.
USE/ADVANTAGE - Delivery of therapeutic agents eg Fe, folic acid, methotrexate, ara A-phosphate, 6 alpha-methyl prednisolone, trifluorothymidine, a hormone e.g. corticosteroid, a gene, enzyme or liposome. Antiviral agents may be targetted to hepatocytes to treat hepatitis, Fe to remedy anaemia etc., Conc. of therapeutic agents is increased in tissues where they have beneficial actions and decreased in tissues where they have unwanted or toxic effects.
Dwg. 0/1

FS CPI

FA AB; DCN

MC CPI: B01-B02; B04-B03; B04-C02D; B05-A03A; B06-D09; B12-G02; B12-H01; D05-A01A1; D05-H

ABEQ EP 563249 A UPAB: 19931129
Targetting a therapeutic agent to a specific population of cells comprises forming a complex of the therapeutic agent with a polysaccharide capable of interacting with a cell receptor and allowing the complex to be

internalised into the cells by receptor mediated endocytosis.

Before degradation or modification, the polysaccharide has mol. wt of over 1,000 D. First step includes modifying a first polysaccharide (pref. by degradation) constituting a second polysaccharide which can interact with a cell receptor, and forming a complex of the therapeutic agent with the second polysaccharide. Pref. the polysaccharide is arabinogalactan (ag.) mannan or **fucoidin**. Pref. combinations of polysaccharide and therapeutic agent are arabinogalactan and Fe, arabinogalactan and methotrexate, arabinogalactan and folic acid, arabinogalactan and are A-phosphate, arabinogalactan and 6 alpha-methylprednisolone and arabinogalactan and trifluorothymidine.

USE/ADVANTAGE - Delivery of therapeutic agents eg Fe, folic acid, methotrexate, are A-phosphate, 6 alpha-methyl prednisolone, trifluorothymidine, a hormone e.g. corticosteroid, a gene, enzyme or liposome. Antiviral agents may be targetted to hepatocytes to treat hepatitis, Fe to remedy anaemia etc., Conc. of therapeutic agents is increased in tissues where they have beneficial actions and decreased in tissues where they have unwanted or toxic effects.

ABEQ EP 563249 B UPAB: 19970522

A complex for use in targeting a therapeutic agent to a specific population of cells, which complex comprises a carrier capable of binding to an RME receptor and selected from the group consisting of a polysaccharide and a modification thereof, and the therapeutic agent covalently bonded to the carrier such that the therapeutic agent may be targeted to the RME receptor on a cellular target and internalised therewith.

Dwg.0/0

L108 ANSWER 25 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1988-220179 [31] WPIX
DNC C1988-098273
TI Anti metastatic and/or antiinflammatory compsns. - contg. sulphated polysaccharide.
DC B04 C03
IN PARISH, C R; SNOWDEN, J M; SNOWDEN, J
PA (PARI-I) PARISH C R; (AUSU) UNIV AUSTRALIAN NAT
CYC 17
PI WO 8805301 A 19880728 (198831)* EN 53p
RW: AT BE CH DE FR GB IT LU NL SE
W: AU JP US
AU 8812410 A 19880810 (198845)
EP 355088 A 19900228 (199009) EN
R: AT BE CH DE FR GB IT LI LU NL SE
JP 02502006 W 19900705 (199033)
CA 1316828 C 19930427 (199322) A61K031-725
IL 85145 A 19940826 (199435) A61K031-725
IL 106354 A 19941021 (199443) A61K031-715
EP 631784 A1 19950104 (199506) EN 12p A61K031-725
R: AT BE CH DE FR GB IT LI LU NL SE
EP 355088 A4 19900816 (199512)
US 5541166 A 19960730 (199636) 12p A61K031-725
EP 355088 B1 19971210 (199803) EN 15p A61K031-725
R: AT BE CH DE FR GB IT LI LU NL SE
JP 2701904 B2 19980121 (199808) 13p A61K031-725
DE 3856083 G 19980122 (199809) A61K031-725
JP 09328431 A 19971222 (199810) 20p A61K031-725
SG 45156 A1 19980116 (199811) A61K031-725
JP 2752353 B2 19980518 (199825) 19p A61K031-725
SG 52246 A1 19980928 (199903) A61K031-725
EP 631784 B1 19990331 (199917) EN A61K031-725
R: AT BE CH DE FR GB IT LI LU NL SE
DE 3856321 G 19990506 (199924) A61K031-725
ADT WO 8805301 A WO 1988-AU17 19880122; EP 355088 A EP 1988-901519 19880122;

JP 02502006 W JP 1988-501413 19880122; CA 1316828 C CA 1988-557015 19880121; IL 85145 A IL 1988-85145 19880120; IL 106354 A IL 1988-106354 19880120; EP 631784 A1 Related to EP 1988-901519 19880122, EP 1994-103441 19880122; EP 355088 A4 EP 1988-901519 ; US 5541166 A Cont of WO 1988-AU17 19880122, Cont of US 1989-391581 19890922, US 1992-853346 19920316; EP 355088 B1 EP 1988-901519 19880122, WO 1988-AU17 19880122, Related to EP 1994-103441 19880122; JP 2701904 B2 JP 1988-501413 19880122, WO 1988-AU17 19880122; DE 3856083 G DE 1988-3856083 19880122, EP 1988-901519 19880122, WO 1988-AU17 19880122; JP 09328431 A Div ex JP 1988-501413 19880122, JP 1997-47706 19880122; SG 45156 A1 SG 1996-766 19880122; JP 2752353 B2 Div ex JP 1988-501413 19880122, JP 1997-47706 19880122; SG 52246 A1 SG 1996-1249 19880122; EP 631784 B1 Div ex EP 1988-901519 19880122, EP 1994-103441 19880122; DE 3856321 G DE 1988-3856321 19880122, EP 1994-103441 19880122

FDT IL 106354 A Div ex IL 85145; EP 355088 B1 Related to EP 631784, Based on WO 8805301; JP 2701904 B2 Previous Publ. JP 02502006, Based on WO 8805301; DE 3856083 G Based on EP 355088, Based on WO 8805301; JP 2752353 B2 Previous Publ. JP 09328431; EP 631784 B1 Div ex EP 355088; DE 3856321 G Based on EP 631784

PRAI AU 1987-9991 19870123; AU 1988-12410 19870113

REP 1.Jnl.Ref; AU 8322582; AU 8430806; EP 140781; EP 165569; EP 208623; EP 25123; GB 1029034; JP 60174729; US 4710493; 4.Jnl.Ref; EP 251134; EP 254067; 9.Jnl.Ref; JP 61057520; WO 8807060

IC A61K031-72; A61K045-05; C12N009-99
ICM A61K031-715; A61K031-725
ICS A61K031-72; A61K045-05; C12N009-99

ICA C08B037-10

AB WO 8805301 A UPAB: 19930923
Antimetastatic and/or antiinflammatory compsns. contain a sulphated polysaccharide (I) which blocks or inhibits endoglycosidase activity.
(I) is a heparinase-inhibiting sulphated polysaccharide, pref. **fucoidan**, pentosan sulphate, dextran sulphate, lambda-carrageenan or esp. heparin. The heparin may be modified to reduce its anticoagulant activity, esp. by decarboxylation or redn. and periodate oxidn.
USE/ADVANTAGE - (I) inhibit metastasis of tumours (e.g. 13762 MAT mammary adenocarcinoma in rats), apparently by inhibiting passage of tumour cells through blood vessel walls, and are also active against experimental allergic encephalomyelitis.
0/2

FS CPI

FA AB; DCN

MC CPI: B04-C02; B12-A06; B12-C10; **B12-D02**; B12-D07; B12-G01B3; B12-G07; C04-C02; C12-A06; C12-C10; **C12-D02**; C12-D07; C12-G01B3; C12-G07

ABEQ US 5541166 A UPAB: 19960913
A method of anti-metastatic treatment of an animal or human patient in need of such treatment, which comprises administration to the patient an anti-metastatic effective amount of sulphated polysaccharide which blocks or inhibits endoglycosidase activity, said sulphated polysaccharide being periodate-oxidized, reduced heparin.
Dwg.0/2

ABEQ EP 355088 B UPAB: 19980119
Antimetastatic and/or antiinflammatory compsns. contain a sulphated polysaccharide (I) which blocks or inhibits endoglycosidase activity.
(I) is a heparanase-inhibiting sulphated polysaccharide, pref. **fucoidan**, pentosan sulphate, dextran sulphate, lambda-carrageenan or esp. heparin. The heparin may be modified to reduce its anticoagulant activity, esp. by decarboxylation or redn. and oeriodate oxidn.
USE/ADVANTAGE - (I) inhibit metastasis of tumours (e.g. 13762 MAT mammary adenocarcinoma in rats), apparently by inhibiting passage of tumour cells through blood vessel walls, and are also active against experimental allergic encephalomyelitis.
Dwg.0/2

L108 ANSWER 26 OF 26 WPIX (C) 2003 THOMSON DERWENT
AN 1985-130814 [22] WPIX
DNC C1985-056692
TI Low salt content tangle prepn. - by immersing dry sea tangle in acetic acid soln., maturing, washing, drying, re-immersing in acetic acid, adding seasoning etc..
DC D13
PA (FUJI-N) FUJI KONBU KK
CYC 1
PI JP 60066961 A 19850417 (198522)* 5p
JP 61043030 B 19860925 (198643)
ADT JP 60066961 A JP 1983-175586 19830922
PRAI JP 1983-175586 19830922
IC A23L001-33
AB JP 60066961 A UPAB: 19930925
Method comprises (a) immersing starting dry sea tangle in aq. 8-15% acetic acid solns; (b) maturing; (c) washing in water at 40-100 deg.C for several-300 seconds favourably at 60-80 deg.C for 30-60 seconds; (d) drying to a moisture content of 5-30 (10-20)%; (e) immersing again in acetic acid soln; (f) maturing; (g) impregnating seasoning soln. contg. edible binder in it; and (h) preparing tangle flake as usual through pressing, maturing and shaving.
Pref. the washing water contains at least one of alginic acid, (salt), aminoacids, laminaran, **fucoidin**, mannit, etc.; or the washing water is obtd. by de-salting once used washing water, to suppress the dissolution of taste and flavour components.
USE/ADVANTAGE - Usually starting dry sea tangle has salt content 6-12% and tangle flake prepd. from it, has salt content ca. 10%. Recently foods of low salt content have been required for health reasons. By washing sea tangle with water under specific conditions, salt can be dissolved out with suppressing the dissolution of taste and flavour components and tangle flake of salt content 4.5% can be prepd..
0/0
FS CPI
FA AB
MC CPI: **D03-H01T**

=> d l109 all abeq tech abex tot

L109 ANSWER 1 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 2003-093322 [08] WPIX
DNC C2003-023560
TI Drugs for preventing and/or treating fish infections due to viruses or bacteria, containing algae belonging to genera Kjellmaniella, Echlonia and Ascophyllum, or giant kelp or their extracts.
DC B04 C03
IN HAMASATO, K; KANEMITSU, A; KAWANO, T; NAGAOKA, M; NAKAO, M; OKUMURA, T; OMURA, H; SASAKI, M; UEYAMA, S; **YAMASHITA, T**; YOSHIMOTO, T
PA (HAMA-I) HAMASATO K; (KANE-I) KANEMITSU A; (KAWA-I) KAWANO T; (MIYA-N) MIYAKO KAGAKU CO LTD; (NAGA-I) NAGAOKA M; (NAKA-I) NAKAO M; (OKUM-I) OKUMURA T; (OMUR-I) OMURA H; (SASA-I) SASAKI M; (UEYA-I) UEYAMA S; (HONS) YAKULT HONSHA KK; (YAMA-I) YAMASHITA T; (YOSH-I) YOSHIMOTO T
CYC 6
PI WO 2002092114 A1 20021121 (200308)* JA 23p A61K035-80
W: CN EC ID JP KR PH
ADT WO 2002092114 A1 WO 2002-JP4457 20020508
PRAI JP 2001-141272 20010511
IC ICM A61K035-80
ICS A61K031-737; A61K035-74; A61P031-04; A61P031-12
AB WO 200292114 A UPAB: 20030204
NOVELTY - Drugs (I) for preventing and/or treating fish infections contain

1 or more of algae belonging to the genera Kjellmaniella, Echlonia and Ascophyllum, giant kelp or their extracts.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) feeds for fish cultivation containing (I); and

(2) a method for fish cultivation, or for preventing and/or treating fish infections, by administering (I) or the formulated feeds.

ACTIVITY - Antibacterial; Virucide.

MECHANISM OF ACTION - None given in the source material.

USE - The drugs are for preventing and/or treating fish infections due to viruses or bacteria, particularly penaeid rod-shaped DNA virus (PRDV)-infection.

ADVANTAGE - The penaeid rod-shaped DNA virus (PRDV)-infection can be effectively prevented or treated.

Dwg.0/4

FS CPI

FA AB; DCN

MC CPI: B04-A08A; B04-A10; B04-F08; B04-F10B1; B14-A01; B14-A02; C04-A08A; C04-A10; C04-F08; C04-F10B1; C14-A01; C14-A02

TECH UPTX: 20030204

TECHNOLOGY FOCUS - PHARMACEUTICALS - Preferred Drugs: (I) optionally contain **fucoidan**, and a bacterium of Bacillus subtilis or Bacillus lentus.

ABEX

ADMINISTRATION - (I) Are added to feeds during fish cultivation, at 60 - 80 mg daily.

EXAMPLE - Extracts of algae and giant kelp were obtained by boiling with water, centrifugation and drying the supernatant. Tests were carried out by using the extracts for formulating into feeds for fish cultivation, with high survival rate.

L109 ANSWER 2 OF 14 WPIX (C) 2003 THOMSON DERWENT

AN 2002-719667 [78] WPIX

DNC C2002-203818

TI Foodstuff, drink or fodder. e.g wheat-flour-, starch-, fats-and-oils-, soybean-processed products for human and animals e.g dog, fish, contains **fucoidan**, and agaro-oligosaccharide, as essential components.

DC D13

PA (TAKA-N) **TAKARA BIO KK**

CYC 1

PI JP 2002306131 A 20021022 (200278)* 17p A23L001-308

ADT JP 2002306131 A JP 2001-117144 20010416

PRAI JP 2001-117144 20010416

IC ICM A23L001-308

ICS A21D002-18; A23C009-152; A23C011-10; A23C013-12; A23F003-14; A23G003-00; A23K001-16; A23L001-06; A23L001-16; A23L001-317; A23L001-325; A23L001-48; A23L002-52

AB JP2002306131 A UPAB: 20021204

NOVELTY - A foodstuff, drink or fodder contains **fucoidan**, its decomposition product, its salt, and an agaro-oligosaccharide.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for foodstuff, drink or fodder additive composition comprising **fucoidan**, its decomposition product, its salt, and an agaro-oligosaccharide.

ACTIVITY - Antioxidant; antiallergic; hemostatic; cytostatic; immunostimulant; antirheumatic; antiarthritic; antiinflammatory. 1 kg of **fucoidan** and 1 kg of agaro oligosaccharide was mixed with 136 kg of moisture fodder and administered to lymphocystis-diseased flat fishes at a dose of 0.1 g/kg body weight twice daily. The fodder efficiently treated lymphocystis disease and prevented relapse of lymphocystis disease.

MECHANISM OF ACTION - alpha -glucosidase inhibitor.

USE - Foodstuff (e.g. wheat-flour/starch processed products, noodles, bread, rice cake, fats-and-oils processed products, soybean processed products e.g tofu, fishery product e.g. boiled fish paste, sausage, dairy product e.g. cream and yogurt, vegetable-fruits processed product e.g. jam and vegetable/fruit drink, confectionery such as chocolates and biscuits, alcoholic beverages such as sake and wine; drink e.g. black tea, oolong eta and coffee, seasoning e.g. soy sauce and vinegar, etc) or fodder (e.g. stock raising product, processed marine product, etc) containing functional component derived from seaweed, for health maintenance. Also as fodder additive for improving health of pet animals e.g. dog, cat, horse or rabbit and marine animal e.g. oyster, shellfish, scallop, prawn, crab, etc.

ADVANTAGE - The foodstuff, drink and fodder has excellent physiological function improving effect and dietary fiber function, hence it provides excellent health improvement such as apoptosis induction, growth factor production potentiation, cytokine production regulation, antioxidant action, antiallergic effect, and hemostasis maintenance. Agaro-oligosaccharide prevents over production of nitrogen monoxide in the living body, provides antirheumatic-arthritic effect, antiinflammatory effect, inhibits endotoxin shock, inhibitor alpha -glucosidase, etc. High functionality fodder, drink and foodstuff can be easily manufactured using the composition.

Dwg.0/0

FS CPI

FA AB

MC CPI: D01-A; D01-B; D03-C; D03-G; D06-A; D06-H; D06-H01

TECH UPTX: 20021204

TECHNOLOGY FOCUS - FOOD - Preferred Ingredients: The food, drink or fodder contains high concentration of components. The **fucoidan** is purified **fucoidan**. Agaro-oligosaccharide is agarobioses.

Preferred Amount: The composition contains 0.1-99.9 (20-80) weight% (wt.%) each of **fucoidan** and agaro-oligosaccharide. **Fucoidan** and agaro-oligosaccharide are blended in the weight ratio of 0.1:99.9-99.9:0.1, preferably 30:70-70:30. Foodstuff and drinks contains 0.0001-40 (0.01-5) wt.% each of **fucoidan** and agaro-oligosaccharide.

ABEX

ADMINISTRATION - **Fucoidan** and oligosaccharide are each consumed at a dose of 0.0001-50 (0.01-10) mg/kg body weight daily, after adding the components into food or drink. **Fucoidan** and oligosaccharide are administered orally in powder form at a dose of 0.0001-2000 mg/kg body weight/day.

EXAMPLE - 7.3 kg of calcium chloride dihydrate was dissolved in 900 l of tap water. 20 g of dried product of Kjellmaniella tangle weed was ground and mixed with the water and temperature was raised from 12degreesC to 90degreesC by blowing water vapor for 40 minutes, subsequently heated at 90-95degreesC with stirring for 2 hours and cooled. 1100 l of cooled product was obtained. The cooled product was solid-liquid separated and 900 l of supernatant was obtained. 360 l of supernatant was concentrated to 20 l. Subsequently 20 l of tap water was added and concentration step was repeated 5 times. Then desalting step was performed and 25 l of extract derived from Kjellmaniella tangle weed was obtained. 1 l of the solution was freeze dried and 13 g of Kjellmaniella tangle weed derived **fucoidan** dried product was obtained. Commercially available agar was dissolved in desalted water to produce 10% weight/volume solution. A strong cationic-exchange resin was added to the solution to produce a concentration of 1% weight/volume, then hydrolyzed at 90degreesC for 3 hours. The product was solid-liquid separated to remove resin from the solution. The filtrate was decolorized by adding 2 weight/volume% of activated carbon and filtered. The resulting solution was added to 1 N sodium hydroxide and freeze-dried to produce agaro-oligosaccharide composition. The composition had pH of 5.2, moisture content of 2.3%, and contained galactose (9.8%), agarobiose (44.1%) and agaro-oligosaccharides

except agarobiose (43.4%). A nutritive drink was prepared by compounding the tangle weed **fucoidan** and agaro-oligosaccharide. The nutritive drink was found to have excellent taste, fragrance and health improving effect.

L109 ANSWER 3 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 2002-404408 [43] WPIX
DNC C2002-113556
TI Use of **fucoidan** containing compositions for e.g. enhancing beta-transforming growth factor, preventing wrinkles, improving skin elasticity and promoting collagen production.
DC B04 D21
IN ADACHI, S; **KATO, I**; SAKAI, T; WU, H; YASUDA, M
PA (TAKI) **TAKARA SHUZO CO LTD**
CYC 95
PI WO 2002006351 A1 20020124 (200243)* JA 66p C08B037-00
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001069508 A 20020130 (200257) C08B037-00
ADT WO 2002006351 A1 WO 2001-JP6032 20010712; AU 2001069508 A AU 2001-69508 20010712
FDT AU 2001069508 A Based on WO 200206351
PRAI JP 2001-67445 20010309; JP 2000-212143 20000713; JP 2000-400615 20001228
IC ICM C08B037-00
ICS A61K007-00; A61K031-737; A61K035-56; A61K035-80; A61P017-00
AB WO 200206351 A UPAB: 20020709
NOVELTY - Drugs or cosmetics comprising **fucoidan**, it's decomposition products or salts for:
(1) treating or preventing diseases by enhancing beta -transforming growth factor (beta -TGF);
(2) ameliorating or preventing wrinkles;
(3) increasing or maintaining skin elasticity;
(4) ameliorating or preventing skin thickening;
(5) preventing collagen reduction; and
(6) enhancing collagen production.
ACTIVITY - Dermatological. A hydrophilic ointment containing 25% v/v **fucoidan** extracted from Gagome using ethanol was applied to the backs of hairless mice at 250 ml/day five times a week and the mice were exposed to UVB radiation at thirteen weeks. After twenty-four weeks the skin thickness was 42 mm and skin contained 47.2 micro g/mg. The control results were 106 mm and 26 micro g/mg compared to 21 mm and 42 micro g/mg.
MECHANISM OF ACTION - beta -TGF agonist; collagen agonist.
USE - As a drug or cosmetic for:
(1) treating or preventing diseases by enhancing beta -TGF;
(2) improving or preventing wrinkles;
(3) increasing or maintaining skin elasticity;
(4) ameliorating or preventing skin thickening;
(5) preventing collagen reduction; and
(6) enhancing collagen production.
Dwg.0/1
FS CPI
FA AB; DCN
MC CPI: B04-C02D; B11-B; B14-L01; B14-N17; B14-R01; D08-B; D08-B09
TECH UPTX: 20020709
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Active Agent: **Fucoidan** is extracted from seaweed or Echinodermata species.
ABEX
ADMINISTRATION - Dosage is 0.01-5 (preferably 0.1-2) g/day topically or

0.1 mg-10 g (preferably 10 mg-2 mg) per day orally.

L109 ANSWER 4 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 2002-082793 [11] WPIX
DNC C2002-025000
TI New **fucoidan** deacylase alpha-D-glucuronidase and endo-alpha-L-fucosidase for engineering sugar chains for anticancer and anticoagulant drugs.
DC B04 D16
IN IKAI, K; ISHIZUKA, K; **KATO, I**; KOJIMA, K; SAKAI, T; SHIMANAKA, K
PA (TAKI) **TAKARA SHUZO CO LTD**; (TAKI) **TAKARA BIO INC**
CYC 95
PI WO 2001081560 A1 20011101 (200211)* JA 145p C12N009-24
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001048788 A 20011107 (200219) C12N009-24
EP 1277834 A1 20030122 (200308) EN C12N009-24
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
ADT WO 2001081560 A1 WO 2001-JP3333 20010419; AU 2001048788 A AU 2001-48788 20010419; EP 1277834 A1 EP 2001-921895 20010419, WO 2001-JP3333 20010419
FDT AU 2001048788 A Based on WO 200181560; EP 1277834 A1 Based on WO 200181560
PRAI JP 2000-186346 20000621; JP 2000-121116 20000421
IC ICM C12N009-24
ICS C08B037-00; C12N001-20; C12P019-04
ICA C12N015-11
ICI C12N015:11
AB WO 200181560 A UPAB: 20020215
NOVELTY - **Fucoidan** deacylase, alpha -D-glucuronidase and endo-alpha -L-fucosidase of microbial origin, are new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) microorganisms producing the enzymes;
(2) production of the enzymes by culture of the microorganisms;
(3) preparation of deacetylated glucuronofucan sulfate, deacetylated glucuronofucan sulfate-containing oligosaccharides, and their decomposition products using the enzymes;
(4) oligosaccharides prepared using the enzymes; and
(5) activators for the enzymes.
ACTIVITY - Cytostatic; anticoagulant.
MECHANISM OF ACTION - Blood coagulation reducer; apoptosis inducer.
USE - The enzymes are used for engineering sugar chains to produce specific oligosaccharide structures active as anticoagulant and anticancer drugs.
Dwg.0/40
FS CPI
FA AB; DCN
MC CPI: B04-C02X; B04-F01; B04-L01; B04-N03; B14-F04; B14-H01; D05-A04; D05-C03; D05-C08; D05-H08
TECH UPTX: 20020215
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Enzyme: The **fucoidan** deacylase has a working pH of 6-9.1 and working temperature of 23-45 degreesC, and hydrolyses acetyl groups on glucuronofucan sulfate (or oligosaccharides containing it). The alpha-D-glucuronidase has a working pH 5.8-7.8 and working temperature 14-29 degreesC, and produces D-glucuronic acid by hydrolysis of the alpha-D-glucuronyl group on deacetylated glucuronofucan sulfate. The endo-alpha-L-fucosidase has a working pH 4.5-7.5 and working temperature 23-42 degreesC, and hydrolyses endo-alpha-L-fucosyl groups on deacetylated glucuronofucan sulfate.

Activators for the enzymes include sodium chloride, calcium chloride and proteins. The microorganism producing the enzymes is a Fucophilus strain having a genomic GC content of about 50 %. Glucuronofucan sulfate oligosaccharides include the specific structures of (I), (II), and (III). One or more of the free hydroxyl groups on the sugar residues bear sulfate or acetate groups, and all Fuc-Fuc linkages are (1-4).
(Fuc-Fuc-Fuc-Fuc(2-GlucUA))n-Fuc-Fuc-Fuc-Fuc (I)
Fuc-Fuc-Fuc-Fuc(2-GlucUA)-(Fuc-Fuc-Fuc-Fuc(2-GlucUA))n-Fuc-Fuc-Fuc-Fuc (II)
GlucUA(1-2)-Fuc-Fuc-Fuc-Fuc-Fuc-Fuc (III)
Fuc = L-fucose;
GlucUA = D-glucuronic acid; and
n = 1-5000.

ABEX
SPECIFIC MICROORGANISMS - Fucophilus fucoidanolyticus SI-1234 (FERM P-17517) is claimed.
EXAMPLE - Fucophilus fucoidanolyticus SI-1234 (FERM P-17517) is cultured in the presence of 0.2 % glucuronofucan sulfate and 1 % peptone in artificial seawater medium. The cell bodies are disrupted by ultrasound and the supernatant purified on a diethylaminoethyl (DEAE)-Cellulofine (RTM) A-800 column with a 100mM to 40mM NaCl gradient of elution to isolate an enzyme fraction with 0.4 mU/ml activity. Use of this fraction to decompose glucuronofucan sulfate in 10 mM imidazole hydrochloride buffer containing 250 mM NaCl and 20 mM calcium chloride for 6 days at 30 degrees Centigrade and separation of the products on a DEAE-Cellulofine (RTM) A-800 column with a 20 mM to 600 mM NaCl elution gradient yields eight oligosaccharide products with molecular weights from 762 to 4216, and fucose/glucuronic acid molar ratios of 7:1 to 19:4.

L109 ANSWER 5 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 2002-082569 [11] WPIX
DNC C2002-024895
TI Antifucoidan antibody recognizing specific **fucoidan** structures, useful in functional studies and structural analysis of physiologically-active **fucoidans** of various origin as well as their quantizations for use in drugs and cosmetics.
DC B04 D16
IN HINO, F; **KATO, I**; NAKAGAWA, K
PA (TAKI) **TAKARA SHUZO CO LTD**
CYC 93
PI WO 2000077049 A1 20001221 (200211)* JA 27p C07K016-14
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000051061 A 20010102 (200216) C07K016-14
EP 1186616 A1 20020313 (200225) EN C07K016-14
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
KR 2002007418 A 20020126 (200252) C07K016-14
CN 1354757 A 20020619 (200263) C07K016-14
JP 2001503905 X 20030114 (200316) C07K016-44
ADT WO 2000077049 A1 WO 2000-JP3679 20000607; AU 2000051061 A AU 2000-51061 20000607; EP 1186616 A1 EP 2000-935565 20000607, WO 2000-JP3679 20000607; KR 2002007418 A KR 2001-714938 20011122; CN 1354757 A CN 2000-808570 20000607; JP 2001503905 X WO 2000-JP3679 20000607, JP 2001-503905 20000607
FDT AU 2000051061 A Based on WO 200077049; EP 1186616 A1 Based on WO 200077049; JP 2001503905 X Based on WO 200077049
PRAI JP 1999-165191 19990611
IC ICM C07K016-14; C07K016-44
ICS C07K017-00

AB WO 200077049 A UPAB: 20020215
NOVELTY - Antifucoidan antibodies recognizing specific **fucoidan** structures, (I) and (II), are new.
DETAILED DESCRIPTION - Antifucoidan antibodies recognizing specific **fucoidan** structures of formulae (I) and (II), are new.
An INDEPENDENT CLAIM is also included for an antibody immobilized onto a support.
USE - The antibodies are useful in the field of biochemistry in the functional studies and structural analysis of physiologically-active **fucoidans** of various origin, e.g. those with apoptosis induction activity, inhibitory activity on cancer proliferation and metastasis, antiviral activity and anticoagulation activity, as well as their quantizations for use in drugs and cosmetics.
ADVANTAGE - Such antibodies can recognize **fucoidan** structures specifically.
Dwg.0/1
FS CPI
FA AB; GI; DCN
MC CPI: B04-C02; B04-C02X; B04-G01; B11-C07A; B12-K04A; D05-H09; D05-H11
TECH UPTX: 20020215
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Antibody: Antibodies produced by GFD G-28 (FERM BP-7173) can preferably recognize (I) but not (II). Antibodies produced by GFD 2-9C (FERM BP-7174) can preferably recognize (II) but not (I).
ABEX
EXAMPLE - **Fucoidans** were isolated from kelp by the conventional method, which were injected into female Balb/c mice for immunization at 100 mg/ 100 ml then with an emulsion of incomplete **fucoidan** adjuvant. The spleen was homogenized for centrifugation, and the separated spleen cells were incubated with mouse myeloma cells P3U1 to give viable fusion cells for selection of antibody strains by immunoassay of the supernatant solutions. The two clones of GFD G-28 and GFD 2-9C producing cells were thus obtained for production of these antibodies.

L109 ANSWER 6 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 2000-217990 [19] WPIX
DNC C2000-066672
TI Antibacterial agent, especially against Helicobacter pylori - for treating gastric ulcer contains **fucoidan** and/or its decomposed product.
DC B04 D13
PA (TAKI) **TAKARA SHUZO CO LTD**
CYC 1
PI JP 2000044602 A 20000215 (200019)* 5p C08B037-00
ADT JP 2000044602 A JP 1998-217282 19980731
PRAI JP 1998-217282 19980731
IC ICM C08B037-00
ICS A23L001-30; A23L002-38; A23L002-52; A61K031-725
ICA A61K035-80
AB JP2000044602 A UPAB: 20000419
NOVELTY - An antibacterial agent contains **fucoidan** and/or its decomposed product as an active ingredient.
USE - As antibacterial agent, particularly against Helicobacter pylori in foodstuffs or drinks (claimed). The antibacterial agent is used for maintaining health, as gastroenteric drink and to treat gastric ulcer.
ACTIVITY - Antibacterial (especially against Helicobacter pylori (claimed). The antibacterial activity was measured by performing a growth inhibition test. The test was carried out by preparing various concentrations of **fucoidan** and/or its decomposed product (A,B and C) and were compared with purified water for the microbial count. The test samples and water were inoculated in 5% BHI broth medium containing fetal bovine serum at a pH of 7.3. The culture medium was incubated for 1-6 days in an anaerobic culture jar at 37 deg. C. The number of living

microbes in test samples and water were measured in test samples and water were measured by surface smearing cultivation and calculated by counting CFU/ml (colony forming unit). The CFU were measured at 1,2,4 and 6 days and was found to be more in water (8.6). The concentration of test sample (A) was found to have dead microbes on fourth day itself which showed the effect of antibacterial effect especially against Helicobacter pylori.
Dwg.0/1
FS CPI
FA AB
MC CPI: B14-A01A; B14-E08; D03-H01G

L109 ANSWER 7 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 2000-013246 [01] WPIX
DNC C2000-002517
TI New promoter for DNA synthesis reactions including polymerase chain reaction increases synthesis efficiency.
DC B04 D16
IN ASADA, K; FUJITA, T; **KATO, I**; MIYAKE, K; MUKAI, H; SATO, Y; TAKEDA, O; UEMORI, T
PA (TAKI) **TAKARA SHUZO CO LTD**
CYC 86
PI WO 9954455 A1 19991028 (200001)* JA 78p C12N015-10
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW
AU 9935341 A 19991108 (200014)
EP 1072678 A1 20010131 (200108) EN C12N015-10
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
KR 2001042958 A 20010525 (200168) C12N015-10
CN 1306570 A 20010801 (200172) C12N015-10
JP 2000544787 X 20021105 (200304) C12N015-09
ADT WO 9954455 A1 WO 1999-JP2121 19990421; AU 9935341 A AU 1999-35341 19990421; EP 1072678 A1 EP 1999-917081 19990421, WO 1999-JP2121 19990421; KR 2001042958 A KR 2000-711784 20001023; CN 1306570 A CN 1999-807709 19990421; JP 2000544787 X WO 1999-JP2121 19990421, JP 2000-544787 19990421
FDT AU 9935341 A Based on WO 9954455; EP 1072678 A1 Based on WO 9954455; JP 2000544787 X Based on WO 9954455
PRAI JP 1998-315243 19981106; JP 1998-114005 19980423
IC ICM C12N015-09; C12N015-10
ICS C12Q001-68
AB WO 9954455 A UPAB: 20000105
NOVELTY - A promoter for DNA synthesis containing one or more acidic substances and/or cationic complexes is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) methods of DNA synthesis using the promoter; and
(2) kits for use in the DNA synthesis, including the promoter.
USE - The promoter allows synthesis of DNA with higher efficiency than in conventional DNA synthesis reactions.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B04-C02; B04-C03; B04-E02; B05-A03B; D05-H09; D05-H18B; D05-H19
TECH UPTX: 20000105
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Promoter: This is an acidic substance such as an acidic polysaccharide or other high polymer, or a cationic complex such as a group VIII or other transition metal complex (especially of cobalt, iridium or rhodium).
Preferred Method: DNA is amplified using the polymerase chain reaction, in particular one using two or more DNA polymerases with 3'-5' exonuclease

activity (such as an alpha-DNA polymerase and a non-alpha non-pol I DNA polymerase).

ABEX

SPECIFIC COMPOUNDS - The acidic substance used as promoter is **fucoidan** (including **fucoidan**-F and **fucoidan** -U), dextran sulphate, carragheenan, heparin, rhamnan sulphate, dermatan sulphate (chondroitin sulphate B), heparin sulphate, hyaluronic acid, alginic acid, pectin, polyglutamic acid, polyacrylic acid, polyvinyl sulphate, polystyrene sulphate or DNA. The cationic complex is (Co(NH3)6)Cl3, (Co(H2NCH2CH2NH2)3)Cl3 or (Rh(H2NCH2CH2NH2)3)Cl3.

EXAMPLE - 30 cycles of polymerase chain reaction are carried out using lambda-phage DNA (500pg) as template, with Pfu DNA polymerase I (1.25U), Pfu DNA polymerase II (1.25U) and three primer pairs designed to amplify fragments 1, 2 or 4 kb in length respectively from the template. The reaction is carried out in the presence of **fucoidan**-F (5ng or 50ng) as promoter, or for comparison in the absence of a promoter. Electrophoresis on the amplification product confirms amplification of the desired 1, 2 or 4 kb fragment when the promoter is present, and a higher amplification fragment yield for 50ng promoter than for 5ng promoter. When promoter is absent no detectable amplification occurs.

L109 ANSWER 8 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 1999-096182 [09] WPIX
DNC C1999-028503
TI New sugar compound comprising sulphation of at least one alcoholic hydroxy group - useful in medicine as anti-coagulant, anti-tumour and anti-AIDS virus infection etc..
DC B03 B04 D16 D17 E13
IN AKIYOSHI, S; IKAI, K; **KATO, I**; KIMURA, H; KOJIMA, K; NAKANISHI, Y; SAKAI, T
PA (REGL-N) RES INST GLYCOTECHNOLOGY; (TAKI) **TAKARA SHUZO CO LTD**
CYC 1
PI AU 9724664 A 19981203 (199909)* EN 135p C07H011-00
ADT AU 9724664 A AU 1997-24664 19970528
PRAI AU 1997-24664 19970528
IC ICM C07H011-00
ICS C08B037-00; C12N001-20; C12N009-24
AB AU 9724664 A UPAB: 19990302
A sugar compound represented by formula (I) or (II) are new comprising sulphation of at least one alcoholic hydroxyl group or its salt: X = H, (III); and Y = (IV), (V); Z = (VI); A1-6, B1-6 = H, SO3H. Also claimed are: (A) an endo-**fucoidan**-lyase having the following physicochemical properties: (i) acts upon **fucoidan** to liberate at least one sugar compound represented by the above; (ii) has optimum pH 6-10; and (iii) has optimum temperature 30-40 deg. C; and (B) a bacterium belonging to Fucoidanobacter which has menaquinone in the electron transport chain and contains approximately 60% of GC.

USE - The sulphated polysaccharide is useful in medicine as it has various biological activities e.g. anti-coagulant, lipaemia clearing, anti-tumour, cancer metastasis inhibitory and anti-AIDS virus infection effects. The sugar compounds are also useful in analysing the structure of **fucoidan**, identifying enzymatically degraded products of **fucoidan** and detecting the biological activities.

Dwg.0/41
FS CPI
FA AB; GI; DCN
MC CPI: B04-F1000E; B04-L06; B07-A02B; B10-A07; B14-A02B1; B14-F04; B14-F06; B14-H01; B14-H01B; D05-A02D; D05-H04; D05-H09; D06-G; E07-A02H; E07-A03C

L109 ANSWER 9 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 1999-023989 [02] WPIX

DNN N1999-018484 DNC C1999-007249
TI Agent for preventing infections in farmed fish and shellfish - contains sulphated polysaccharide, especially **fucoidan**.
DC B04 C03 D13 P14
IN KANEMITSU, A; NAGAOKA, M; OMURA, H; TAKAHASHI, Y; UEYAMA, S; **YAMASHITA, T**; YOKOKURA, T
PA (MIYA-N) MIYAKO KAGAKU KK; (HONS) YAKULT HONSHA KK
CYC 4
PI WO 9842204 A1 19981001 (199902)* JA 15p A23K001-16
W: CN ID JP KR
CN 1251020 A 20000419 (200036) A23K001-16
JP 10545416 X 20000919 (200050) A23K001-16
KR 2000075860 A 20001226 (200134) A23K001-16
ADT WO 9842204 A1 WO 1998-JP1145 19980318; CN 1251020 A CN 1998-803571 19980318; JP 10545416 X JP 1998-545416 19980318, WO 1998-JP1145 19980318; KR 2000075860 A WO 1998-JP1145 19980318, KR 1999-707938 19990831
FDT JP 10545416 X Based on WO 9842204; KR 2000075860 A Based on WO 9842204
PRAI JP 1997-67973 19970321
IC ICM A23K001-16
ICS A01K061-00; A23K001-18
AB WO 9842204 A UPAB: 19990122
Agent for prevention and treatment of infection in fish and shellfish contains a sulphated polysaccharide (I) as effective component.
(I) is preferably **fucoidan**.
USE - (I) is used in feedstuff for rearing fish and shellfish (claimed). (I) is used to protect e.g. prawns, yellow-tailed tuna, sea-bream and flat fish from infection with bacteria, viruses and parasites.
ADVANTAGE - (I) protects from infection by iridoviridae.
Dwg.1/2
FS CPI GMPI
FA AB; GI
MC CPI: B04-C02; B14-E11; B14-S12; D03-G01

L109 ANSWER 10 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 1999-018298 [02] WPIX
DNC C1999-005693
TI Inhibitor of adhesion of Helicobacter pylori - contains effective ingredient of glucuronic acid containing **fucoidan**, used for prevention of gastric and duodenal ulcers.
DC B05
PA (KAKE) KAKEN PHARM CO LTD; (TAKI) **TAKARA SHUZO CO LTD**
CYC 1
PI JP 10287571 A 19981027 (199902)* 8p A61K031-725
ADT JP 10287571 A JP 1997-99237 19970416
PRAI JP 1997-99237 19970416
IC ICM A61K031-725
ICA A61K035-80
AB JP 10287571 A UPAB: 19990113
An inhibitor of adhesion of Helicobacter pylori contains an effective ingredient of glucuronic acid containing **fucoidan**.
USE - Used for prevention of gastric and duodenal ulcers.
ADVANTAGE - Effective inhibition of gastritis, gastric and duodenal ulcers, including prevention of gastric cancer.
Dwg.0/2
FS CPI
FA AB; DCN
MC CPI: B07-A02; B14-E08

L109 ANSWER 11 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 1998-101040 [09] WPIX
DNC C1998-033406
TI Removal of cancer cells from compositions of haematopoietic cells - by

treatment with apoptosis inducer such as **fucoidan**, dextran sulphate or 4,5-di hydroxy-2-cyclo penten-1-one.

DC B04 D16
IN ASADA, K; **KATO, I**; KONISHI, H; KOYAMA, N
PA (TAKI) **TAKARA SHUZO CO LTD**
CYC 35
PI WO 9801537 A1 19980115 (199809)* JA 59p C12N005-00
RW: AT BE CH DE DK EA ES FI FR GB GR IE IT LU MC NL PT SE
W: AU BG BR CA CN CZ HU JP KR MX NO NZ PL RO SK US VN
AU 9732766 A 19980202 (199826) C12N005-00
EP 930361 A1 19990721 (199933) EN C12N005-00
R: DE FR GB IT NL
CN 1224460 A 19990728 (199948) C12N005-00
JP 10505035 X 19990921 (199950) C12N005-00
KR 2000010744 A 20000225 (200102) C12N005-00
US 2001018209 A1 20010830 (200151) C12N005-08
ADT WO 9801537 A1 WO 1997-JP2254 19970630; AU 9732766 A AU 1997-32766 19970630; EP 930361 A1 EP 1997-928515 19970630, WO 1997-JP2254 19970630; CN 1224460 A CN 1997-196137 19970630; JP 10505035 X WO 1997-JP2254 19970630, JP 1998-505035 19970630; KR 2000010744 A WO 1997-JP2254 19970630, KR 1998-708857 19981103; US 2001018209 A1 CIP of WO 1997-JP2254 19970630, CIP of US 1999-214609 19990108, US 2001-797821 20010305
FDT AU 9732766 A Based on WO 9801537; EP 930361 A1 Based on WO 9801537; JP 10505035 X Based on WO 9801537; KR 2000010744 A Based on WO 9801537
PRAI JP 1996-180500 19960710
IC ICM C12N005-00; C12N005-08
ICS C12N005-02
AB WO 9801537 A UPAB: 19980302
Cancer cells are removed from compositions containing haematopoietic cells by treatment with an apoptosis inducing agent such as a sulphated polysaccharide or its degradation products (e.g. **fucoidan** or dextran sulphate), a carbohydrate containing uronic acid (or its derivatives or degradation products), or 4,5-dihydroxy-2-cyclopenten-1-one. This treatment kills the cancer cells present in the composition without affecting the normal haematopoietic cells.

USE - The method is used for production of haematopoietic cell compositions free from cancer cells, for use in treatment of cancer (such as myeloma) patients by in vitro treatment of marrow cells and for use in marrow transplantation. Compositions of haematopoietic cells into which foreign genes have been introduced (e.g. for gene therapy treatment of beta -thalassemia, sickling or recombinase deficiency) can also be freed from cancer cells by this method.

Dwg.6/8
FS CPI
FA AB; GI; DCN
MC CPI: B04-C02; B04-F04; B10-E04A; B14-H01; D05-H08

L109 ANSWER 12 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 1996-505810 [50] WPIX
DNC C1999-028503
TI New sulphate ester(s) of tri, penta, or hexa saccharide cpds. - and new endo-**fucoidan** hydrolase and microorganism used for producing the sugars, useful as anticoagulants.
DC B03 D16
IN AKIYOSHI, S; IKAI, K; **KATO, I**; KIMURA, H; KOJIMA, K; NAKANISHI, Y; SAKAI, T
PA (REGL-N) RES INST GLYCOTECHNOLOGY; (TAKI) **TAKARA SHUZO CO LTD**; (AKIY-I) AKIYOSHI S; (IKAI-I) IKAI K; (KATO-I) KATO I; (KIMU-I) KIMURA H; (KOJI-I) KOJIMA K; (NAKA-I) NAKANISHI Y; (SAKA-I) SAKAI T
CYC 25
PI WO 9634004 A1 19961031 (199650)* JA 113p C07H011-00
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
W: AT CA CN JP KR RU US

JP 08532343 X 19980630 (199836)
EP 870771 A1 19981014 (199845) EN
R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
AU 9724664 A 19981203 (199909) EN 135p C07H011-00
KR 99008099 A 19990125 (200014) C07H011-00
US 6054577 A 20000425 (200027) C07H001-00
CA 2217746 C 20000404 (200035) EN C12N009-88
US 6277616 B1 20010821 (200150) C12N009-24
AU 737081 B 20010809 (200152) C07H011-00
US 2001046696 A1 20011129 (200202) C07H013-12
CN 1330143 A 20020109 (200229) C12N009-24
US 6379947 B2 20020430 (200235) C12N001-12
CN 1183101 A 19980527 (200242) C07H011-00
RU 2193039 C2 20021120 (200307) C07H011-00

ADT WO 9634004 A1 WO 1996-JP1080 19960422; JP 08532343 X JP 1996-532343 19960422, WO 1996-JP1080 19960422; EP 870771 A1 EP 1996-910215 19960422, WO 1996-JP1080 19960422; AU 9724664 A AU 1997-24664 19970528; KR 99008099 A WO 1996-JP1080 19960422, KR 1997-707623 19971027; US 6054577 A WO 1996-JP1080 19960422, US 1997-930002 19970926; CA 2217746 C CA 1996-2217746 19960422, WO 1996-JP1080 19960422; US 6277616 B1 Div ex WO 1996-JP1080 19960422, Div ex US 1997-930002 19970926, US 2000-517633 20000303; AU 737081 B AU 1997-24664 19970528; US 2001046696 A1 Div ex WO 1996-JP1080 19960422, Div ex US 1997-930002 19970926, Div ex US 2000-517633 20000303, US 2001-893620 20010629; CN 1330143 A Div ex CN 1996-193585 19960422, CN 2000-134824 19960422; US 6379947 B2 Div ex WO 1996-JP1080 19960422, Div ex US 1997-930002 19970926, Div ex US 2000-517633 20000303, US 2001-893620 20010629; CN 1183101 A CN 1996-193585 19960422; RU 2193039 C2 WO 1996-JP1080 19960422, RU 1997-119864 19960422

FDT JP 08532343 X Based on WO 9634004; EP 870771 A1 Based on WO 9634004; KR 99008099 A Based on WO 9634004; US 6054577 A Based on WO 9634004; CA 2217746 C Based on WO 9634004; US 6277616 B1 Div ex US 6054577; AU 737081 B Previous Publ. AU 9724664; US 2001046696 A1 Div ex US 6054577, Div ex US 6277616; US 6379947 B2 Div ex US 6054577, Div ex US 6277616; RU 2193039 C2 Based on WO 9634004

PRAI JP 1995-127453 19950428

REP JP 70059563; JP 70215990; JP 80000266

IC ICM C07H001-00; C07H011-00; C07H013-12; C12N001-12; C12N009-24; C12N009-88
ICS C07H001-20; C07H005-10; C07H009-24; C07H013-02; C08B037-00; C12N001-20; C12P019-04; C12P019-14

AB WO 9634004 A UPAB: 20010927

Saccharide cpds. (A) and their salts are new. (A) are cpds. of formula (I) and (II) where at least one alcoholic hydroxyl gp. has been sulphated. A = a fucose gp. of formula (a); X = H or A; Y = H or a gp. of formula (4) bonded at a or b, with the other of a, b = OH; Z = H or a gp. of formula (6); provided that X and Y are not both H.

Also claimed are (i) an endo-type **fucoidan** hydrolase (H) which releases a cpd. (7) and (8) from **fucoidan**, and has pH range 6-10 and temp. range 30-40 deg. C; and (ii) a Fucoidanobacter microorganism with menaquinone in the electron transmission chain and GC content of about 60%. (7) and (8) have formula (I; Y = H; X = A) with the 3-OH of A sulphated in (7) and the 2 and 4 OH of A and the 5 OH of the galactose sulphated in (8). GC is not defined.

USE - The sugar cpds and salts are useful for reagents for study of sugar chains. The new cpds. are useful as antitumour agents, metastasis inhibitors, and antiviral cpds. The endo-type **fucoidan** hydrolase and the Fucoidanobacter are useful for producing the new cpds.

ADVANTAGE - The new cpds. are low mol. wt. cpds. and so, unlike **fucoidan**, are not antigenic.

Dwg.0/42

FS CPI

FA AB; GI; DCN

MC CPI: B04-C02X; B04-F10; B04-L05B; B12-K04E; B14-A02B1; B14-F04; B14-H01;

D05-A02C; D05-C08; D05-H04; D06-G

L109 ANSWER 13 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 1996-379291 [38] WPIX
DNC C1996-119666
TI Sulphuric ester of L-fucose useful as a contraceptive - is more effective than use of spermicide e.g. poly oxyethylene nonyl phenyl-ether having no serious side effects by using oral contraceptive contg. estrogen and synthetic progesterone.
DC A96 B03 C02
PA (TAKI) **TAKARA SHUZO CO LTD**; (TOSA-N) TOSA KOGAKU KENKYUSHO KK
CYC 1
PI JP 08183793 A 19960716 (199638)* 4p C07H011-00
ADT JP 08183793 A JP 1994-337597 19941228
PRAI JP 1994-337597 19941228
IC ICM C07H011-00
ICS A61K031-70
AB JP 08183793 A UPAB: 19960924
A saccharide deriv. comprises at least one OH gp. of L-fucose esterified with sulphuric acid.

The L-fucose sulphuric ester is e.g. L-fucose-2-, 3-, 4- and 5-sulphuric ester, L-fucose-2,3- and 2,4-disulphuric ester, L-fucose-2, 3,4- and 2,3,5-trisulphuric ester, L-fucose-2,3,4,5 -tetrasulphuric ester, alpha-L-fucopyranosyl-2-sulphate-(1,2)-L- fucose and alpha-L-fucopyranosyl-2-sulphate-(1-2)-L-fucose. The sulphosaccharides can be obtd. pref. by acidic hydrolysis of natural **fucoidan** or fucane sulphate.

USE/ADVANTAGE - A sulphuric ester of L-fucose is useful as a contraceptive. The sulphosaccharide inhibits a protein-polysaccharide interaction that closely relates to fertilisation. It acts more effectively than the use of a spermicide such as polyoxyethylene nonyl phenyl ether and does not have any serious side effect by the use of oral contraceptive contg. estrogen and synthetic progesterone.

In an example, purified fucodaine is obtd. by purificn. of dried kelp extract (20 g.) was dissolved in 0.2 M aq. citric acid soln. and heated at pH 3 at 100 deg.C for 3 hrs. To the soln. was added 1 M aq. calcium acetate soln. (300 ml.) and the ppte. was removed. The filtrate was concd. and subjected to gel filtration chromatography to obtain a fraction of which the molecular wt. was up to 500. It was confirmed by high performance liq. chromatography that the fraction consisted of L-fucose-2-, 3-, 4- and 5-sulphuric ester and alpha-L-fucopranosyl-2-sulphate-(1-2)- L-fucose and alpha-L-fucopyranosyl-2-sulphate-(1-2)-L-fucose in a molar ratio of 4:5:5:10:6:4. The pretreatment of hamster spermatozoa with the sulphate L-fucose fraction or an hour completely inhibited fertilisation of matured hamster ova in vitro.

Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: A12-W04C; B10-A07; C10-A07; B14-P01A; C14-P01A

L109 ANSWER 14 OF 14 WPIX (C) 2003 THOMSON DERWENT
AN 1995-317479 [41] WPIX
DNC C1995-140937
TI **Fucoidan** oligosaccharide compsn. - used in cancer metastasis inhibiting agents and in antifungal agents..
DC B04
PA (TAKI) **TAKARA SHUZO CO LTD**; (TOSA-N) TOSA KOGAKU KENKYUSHO KK
CYC 1
PI JP 07215990 A 19950815 (199541)* 6p C07H003-06
ADT JP 07215990 A JP 1994-27589 19940201
PRAI JP 1994-27589 19940201
IC ICM C07H003-06
ICS A61K031-725
ICA A61K035-80

AB JP 07215990 A UPAB: 19951019
Fucoidan oligosaccharide compsn. has the following properties: (1) M.W. distribution: 5x103 or less (by a gel filtration through Cellulofine GCL-25); (2) Protein content: not detected; (3) Anti-aggregation activity: not held substantially. Also claimed are the prepn. of the **fucoidan** oligosaccharide compsn. in which **fucoidan** is hydrolysed by an organic acid under acid conditions; a cancer metastasis inhibiting agent contg. the **fucoidan** oligosaccharide compsn.; and an antifungal agent contg. the **fucoidan** oligosaccharide compsn..
ADVANTAGE - The compsn. has good solubility and absorbability to living body, good reproducibility of biological activity and is also highly safe.
In an example, 2g of **fucoidan** was dissolved in 100 ml water, the pH of the soln. was adjusted to 3.0 with acetic aid, and the soln. was held at 100 deg.C for 3 hrs.. The hydrolysate was gel filtered by Cellulofine CGL-25 column and the fraction of M.W. of 5,000 or lower was desalted and freeze-dried to give 1.98 g of prod. having no anti-aggregation activity at 10 mg/ml or lower.
Dwg.0/0
FS CPI
FA AB
MC CPI: B04-C02X; B14-A04; B14-H01B

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FILE LAST UPDATED: 10 MAR 2003 <20030310/UP>
FILE COVERS 1972 TO DATE.

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L115 ANSWER 1 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 590145 FROSTI
TI Remedies.
IN Tominaga T.; Yamashita S.; Mizutani S.; Sagawa H.; Kato I.
PA Takara Shuzo Co. Ltd
SO European Patent Application
PI EP 1226826 A1 20010301
WO 2001013925 20010301
AI 20000817
PRAI Japan 19990820; 20000313
NTE 20010301
DT Patent
LA English
SL English
AB Remedies for diseases needing the regulation of cytokines or **allergic** diseases contain **fucoidan** and/or its decomposition product as active ingredient. The formulations can induce the production of nitrogen monoxide.
SH **FUNCTIONAL FOODS**
CT **ALLERGIC** DISEASES; **ALLERGIES**; CYTOKINES; EUROPEAN **PATENT**; **FUCOIDAN**; **FUNCTIONAL FOODS**; **PATENT**
DED 23 Aug 2002

L115 ANSWER 2 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 579386 FROSTI
TI Homeostasis-maintaining agents.
IN Nishiyama E.; Sagawa H.; Hino F.; Morihara E.; Sakai T.; Oyashiki H.; Kato I.

PA Takara Shuzo Co. Ltd
SO PCT Patent Application
PI WO 2002022140 A1
AI 20010912
PRAI Japan 20000913; 20000927; 20001109; 20001213; 20010425; 20010613
DT Patent
LA Japanese
SL English
AB Functional compositions and foods are described that contain **fucoidan** or its decomposition products. They are said to help maintain homeostasis in humans and animals. Processes are disclosed for production of **fucoidan** and extracts of marine algae that have reduced colour, decreased bitterness, and lower iodine content. Applications include foods, beverages, seasonings, feeds, and drugs.
SH **FUNCTIONAL FOODS**
CT ALGAE; APPLICATIONS; EXTRACTION; **FUCOIDAN**; HOMEOSTASIS; MARINE ALGAE; **PATENT**; PCT **PATENT**
DED 16 Apr 2002

L115 ANSWER 3 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 568014 FROSTI
TI NUD (non-ulcer dyspepsia)-improving food.
IN Yoshikawa M.; Kudo T.; Nagaoka M.; Hashimoto H.; Kamiyama S.; Shibata H.; Takagi T.
PA Yakult Honsha Co. Ltd
SO Japanese Patent Application
PI JP 2001095528 A 20010410
AI 19990927
NTE 20010410
DT Patent
LA Japanese
SL English
AB A composition is described for a food that is claimed to be beneficial in the treatment of non-ulcer dyspepsia (NUD). The food contains extracts of a **fucoidan** derived from Phaeophyta, in addition to extracts such as senna tea, persimmon leaf, fennel or houttuynia cordata.
SH **FUNCTIONAL FOODS**
CT DISEASES; DYSPEPSIA; EXTRACTS; INTESTINAL DISORDERS; JAPANESE **PATENT**; NON ULCER DYSPEPSIA; **PATENT**; PLANT EXTRACTS; STOMACH ULCERS
DED 15 Nov 2001

L115 ANSWER 4 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 564919 FROSTI
TI Endo-**fucoidan**-lyase.
IN Sakai T.; Kimura H.; Kojima K.; Ikai K.; Akiyoshi S.; Nakanishi Y.; Kato I.
PA Takara Shuzo Co. Ltd; Research Institute for Glycotechology
SO United States Patent
PI US 6277616 B 20010821
AI 20000303
NTE 20010821
DT Patent
LA English
SL English
AB An endo-**fucoidan**-lyase is described that is useful in the production of sugar compounds for the study of carbohydrates. A microorganism of the genus Fucoidanobacter useful in the production of sugar compounds is also given. The lyase acts on **fucoidan**, and has a pH optimum of 6-10 and an optimum pH at 30-40 C.
SH PROCESSING
CT CARBOHYDRATES; ENDO **FUCOIDAN** LYASE; **PATENT**; SUGAR COMPOUNDS; US **PATENT**

DED 9 Oct 2001

L115 ANSWER 5 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 563600 FROSTI
TI Method and producing phosphorylated saccharides.
IN Kamasaka H.; Okada S.; Kusaka K.; Yamamoto K.; Yoshikawa K.
PA Ezaki Glico Co. Ltd
SO United States Patent
PI US 6268182 B 20010731
AI 19960925
PRAI Japan 19940811; 19950519
NTE 20010731
DT Patent
LA English
SL English
AB This **patent** continues from 5 861 048, which describes a method for producing phosphorylated saccharides. They can be used to stop alkali earth metals, e.g. calcium and iron, from precipitating, which helps their absorption by the body. These minerals have a positive effect on the health of the consumer, e.g. in preventing osteoporosis. The phosphorylated saccharides include a phosphate group that is obtained from glucan, mannan, dextran, agar, cyclodextrin, **fucoidan**, gellan gum, locust bean gum, guar gum, tamarind gum or xanthan gum. They are said to prevent the formation of dental caries.
SH **FUNCTIONAL FOODS**
CT FUNCTIONAL INGREDIENTS; HEALTH FOODS; INGREDIENTS; MINERALS; **PATENT**; PHOSPHORYLATED SACCHARIDES; US **PATENT**
DED 25 Sep 2001

L115 ANSWER 6 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 551698 FROSTI
TI Remedies.
IN Inaga T.; Yamashita S.; Mizutani S.; Sagawa H.; Kato I.
PA Takara Shuzo Co. Ltd
SO PCT Patent Application
PI WO 2001013925 A1 20010301
AI 20000817
PRAI Japan 19990820; 20000313
NTE 20010301
DT Patent
LA English
SL English
AB Remedies for diseases needing the regulation of cytokines or **allergic** diseases contain **fucoidan** and/or its decomposition product as active ingredient. The formulations can induce the production of nitrogen monoxide.
SH **FUNCTIONAL FOODS**
CT **ALLERGIC** DISEASES; **ALLERGIES**; CYTOKINES; **FUCOIDAN**; **FUNCTIONAL FOODS**; **PATENT**; PCT **PATENT**
DED 11 May 2001

L115 ANSWER 7 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 501824 FROSTI
TI Foods or drinks.
IN Umeda Y.; Kihara H.; Ikai K.; Kato I.
PA Takara Shuzo Co. Ltd
SO European Patent Application
PI EP 916269 A1
AI 19970515
PRAI Japan 19960612; 19961115
DT Patent
LA English

SL English
AB **Fucoidan** is a polysaccharide containing sulfated fucose. It occurs naturally in seaweed, and it has been shown to have apoptosis-inducing activity. This **patent** application covers foods and beverages containing **fucoidan**, and in which algins derived from the **fucoidan**-containing substance are reduced or removed. The **patent** outlines **fucoidan** extraction processes; active carbon can be used to remove the smell of seaweed. A very wide range of foods and beverages may be fortified with **fucoidan**. Among the examples quoted are processed cereal products, processed oil and fat products, soya products, meat products, dairy products, fruit and vegetable products, confectionery, bakery products, alcoholic beverages, infusion beverages, condiments, canned foods, bottled foods, convenience foods, dried foods, and frozen foods. An effective amount of **fucoidan** is added to a food or beverage to produce a product with apoptosis-inducing activity.
SH **FUNCTIONAL FOODS**
CT APOPTOSIS; BEVERAGES; DIETARY SUPPLEMENTS; EUROPEAN **PATENT**; FORTIFIED BEVERAGES; FORTIFIED FOODS; **FUCOIDAN**; FUNCTIONAL BEVERAGES; **FUNCTIONAL FOODS**; FUNCTIONAL SUPPLEMENTS; NON ALCOHOLIC BEVERAGES; **PATENT**; SEAWEEDS
DED 1 Sep 1999

L115 ANSWER 8 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 490294 FROSTI
TI Acetylfucoidan prepared from Okinawa Nemacystis decipiens and process for preparing the same.
IN Tako M.
SO PCT Patent Application
PI WO 9901478 A1
AI 19980622
PRAI Japan 19970703; 19970909; 19980615
DT Patent
LA Japanese
SL English
AB **Fucoidans** are polysaccharide products with interesting biological properties, such as anticancer activity, lipaemia-reducing activity, antitumour activity and anticoagulant activity. This **patent** application relates to an acetylfucoidan prepared from algae or spores of Okinawa Nemacystis decipiens, and a method for its preparation.
CT ACETYLFUCOIDANS; ALGAL **FUCOIDANS**; ANTICANCER AGENTS; CHOLESTEROL LOWERING AGENTS; DIETARY SUPPLEMENTS; DIETETIC FOODS; **FUCOIDANS**; **FUNCTIONAL FOODS**; **PATENT** ; PCT **PATENT**
DED 13 Apr 1999

L115 ANSWER 9 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 488505 FROSTI
TI Phosphorylated saccharide and method for producing the same.
IN Kamasaka H.; Okada S.; Kusaka K.; Yamamoto K.; Yoshikawa K.
PA Ezaki Glico Co. Ltd
SO United States Patent
PI US 5861048 B 19990119
AI 19950811
PRAI Japan 19940811
NTE 19990119
DT Patent
LA English
SL English
AB This **patent** describes a method for producing phosphorylated saccharides. They can be used to stop alkali earth metals, e.g. calcium and iron, from precipitating, which helps their absorption by the body.

These minerals have a positive effect on the health of the consumer, e.g. in preventing osteoporosis. The phosphorylated saccharides include a phosphate group that is obtained from glucan, mannan, dextran, agar, cyclodextrin, **fucoidan**, gellan gum, locust bean gum, guar gum, tamarind gum or xanthan gum. They are said to prevent the formation of dental caries.
CT FUNCTIONAL INGREDIENTS; HEALTH FOODS; INGREDIENTS; MINERALS; **PATENT**; PHOSPHORYLATED SACCHARIDES; US **PATENT**
DED 8 Mar 1999

L115 ANSWER 10 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 484221 FROSTI
TI Sugar compounds.
IN Sakai T.; Kimura H.; Kojima K.; Ikai K.; Akiyoshi S.; Nakanishi Y.; Kato I.
PA Takara Shuzo Co. Ltd
SO European Patent Application
PI EP 870771 A1
WO 9634004 19961031
AI 19960422
PRAI Japan 19950428
DT Patent
LA English
SL English
AB **Fucoidan** is a sulfated polysaccharide product of brown algae, and has a range of interesting physiological properties, including activity as an anticoagulant, lipaemia-reducing agent, anti-tumour and anti-cancer agent, and activity against the effects of AIDS virus infection. **Fucoidan** is very difficult to analyse and there is a need for the provision of known sugar compounds for use in analysing its structure and identifying its enzyme-degraded products, and characterization of their biological activities. This invention relates to sugar compounds and their salts represented by the illustrated general formula, in which at least one alcoholic hydroxyl group is sulfated. The second part of the invention relates to an endo-**fucoidan**-lyase, and the third part to a novel bacterium of the genus Fucanoidobacter useful for the production of such sugar compounds. Examples and details of production are given.
CT ANALYSIS; ENDOFUCOIDANLYASE; EUROPEAN **PATENT**; FUCANOIDOBACTER; **FUCOIDAN**; **PATENT**; POLYSACCHARIDES; SUGAR COMPOUNDS; SULFATED POLYSACCHARIDES
DED 12 Jan 1999

L115 ANSWER 11 OF 11 FROSTI COPYRIGHT 2003 LFRA
AN 460868 FROSTI
TI Foods or drinks.
IN Umeda Y.; Kihara H.; Ikai K.; Kato I.
PA Takara Shuzo Co. Ltd
SO PCT Patent Application
PI WO 9747208 A1
AI 19970515
PRAI Japan 19960612; 19961115
DT Patent
LA Japanese
SL English
AB The invention relates to functional or medical foods or drinks aimed at inducing apoptosis. The foods or drinks contain **fucoidan** obtained from **fucoidan**-containing substances, which have been treated to remove or reduce in quantity any algins present.
CT APOPTOSIS; **FUCOIDAN**; **FUNCTIONAL FOODS**; MEDICAL FOODS; PCT **PATENT**
DED 10 Feb 1998

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=> fil medline
FILE 'MEDLINE' ENTERED AT 10:20:53 ON 11 MAR 2003

 FILE LAST UPDATED: 8 MAR 2003 (20030308/UP). FILE COVERS 1958 TO DATE.

 On June 9, 2002, MEDLINE was reloaded. See HELP RLOAD for details.

 MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
 MeSH 2003 vocabulary. See http://www.nlm.nih.gov/mesh/summ2003.html
 for a description on changes.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d all tot

L134 ANSWER 1 OF 3     MEDLINE
AN   2000300937      MEDLINE
DN   20300937   PubMed ID: 10841555
TI   Mobilization of stem/progenitor cells by sulfated polysaccharides does not
     require selectin presence.
AU   Sweeney E A; Priestley G V; Nakamoto B; Collins R G; Beaudet A L;
     Papayannopoulou T
CS   Department of Medicine, Division of Hematology, University of Washington,
     Seattle, WA 98195-7710, USA.
NC   AI32177 (NIAID)
     HL46557 (NHLBI)
     HL58734 (NHLBI)
     +
SO   PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF
     AMERICA, (2000 Jun 6) 97 (12) 6544-9.
     Journal code: 7505876. ISSN: 0027-8424.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   200007
ED   Entered STN: 20000720
     Last Updated on STN: 20000720
     Entered Medline: 20000713
AB   Employing carbohydrate ligands, which have been extensively used to block
     selectin function in vitro and in vivo, we have examined the involvement
     of such ligands in stem/progenitor cell mobilization in mice and monkeys.
     We found that sulfated fucans, branched and linear, are capable of
     increasing mature white cells in the periphery and mobilizing
     stem/progenitor cells of all classes (up to 32-fold) within a few hours
     posttreatment in a dose-dependent manner. To elicit the effect, the
     presence of sulfate groups was necessary, yet not sufficient, as certain
     sulfated hexosamines tested (chondroitin sulfates A or B) were
     ineffective. Significant mobilization of stem/progenitor cells and
     leukocytosis was elicited in selectin-deficient mice (L(-/-), PE(-/-), or
     LPE(-/-)) similar to that of wild-type controls, suggesting that the mode
     of action of sulfated fucans is not through blockade of known selectins.
     Other mechanisms have been entertained, in particular, the release of
     chemokines/cytokines, including some previously implicated in
     mobilization. Significant increases were documented in the levels of seven
     circulating chemokines/cytokines within a few hours after fucan sulfate
     treatment and support such a proposition. Additionally, an increase was
     noted in plasma metalloproteinase (MMP) 9, which might independently
     contribute to the mobilization process by enzymatically facilitating
     chemokine/cytokine release. Mobilization by sulfated polysaccharides
     provides a distinct paradigm in the mobilization process and uncovers an
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additional novel in vivo biological role for sulfated glycans. As similarly sulfated compounds were ineffective in vivo, the data also underscore the fact that polysaccharides with similar structures may elicit diverse in vivo effects.

CT Check Tags: Animal; Support, U.S. Gov't, P.H.S.
Chemokines: BL, blood
Cytokines: BL, blood
Gelatinase B: ME, metabolism
*Hematopoietic Stem Cell Mobilization
Macaca nemestrina
Mice
*Polysaccharides: PD, pharmacology
*Selectins: PH, physiology
Structure-Activity Relationship

RN **9072-19-9 (fucoidan)**

CN 0 (Chemokines); 0 (Cytokines); 0 (Polysaccharides); 0 (Selectins); EC 3.4.24.35 (Gelatinase B)

L134 ANSWER 2 OF 3 MEDLINE

AN **97279844** MEDLINE

DN **97279844** PubMed ID: **9134218**

TI The effect of the selectin binding polysaccharide **fucoidin** on eosinophil recruitment in vivo.

AU Teixeira M M; Hellewell P G

CS Imperial College School of Medicine, National Heart and Lung Institute, London.

SO BRITISH JOURNAL OF PHARMACOLOGY, **(1997 Mar)** 120 (6) 1059-66. Journal code: 7502536. ISSN: 0007-1188.

CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 199708

ED Entered STN: 19970908
Last Updated on STN: 19970908
Entered Medline: 19970827

AB 1. In order to accumulate at sites of inflammation, leukocytes initially roll on endothelial cells of postcapillary venules before becoming firmly attached. This process of rolling is mediated by selectins which bind to carbohydrate counter-ligands present on the surface of both leukocytes and endothelial cells. The polysaccharide **fucoidin** has been previously shown to inhibit leukocyte rolling in the mesenteric circulation and to reduce neutrophil accumulation in the skin and meninges in experimental inflammation. 2. In the present study we have assessed the effects of **fucoidin** on eosinophil function in vitro and eosinophil accumulation at sites of inflammation in guinea-pig skin. 3. At concentrations of up to 1200 micrograms ml-1, **fucoidin** inhibited phorbol myristate acetate (PMA)-induced eosinophil homotypic aggregation by up to 60% but had no inhibitory effect on PMA-induced eosinophil adhesion to serum-coated plates. 4. **Fucoidin** effectively reduced the binding of the anti-L-selectin mAb MEL-14 to guinea-pig eosinophils. Binding of a P-selectin-IgG chimera to eosinophils was also partially inhibited by **fucoidin**, but binding of an anti-CD18 or an anti-VLA-4 mAb were unaffected. 5. When given systemically to guinea-pigs, **fucoidin** suppressed 111In-labelled eosinophil recruitment to sites of allergic inflammation. 111In-labelled eosinophil accumulation induced by platelet-activating factor (PAF) and zymosan-activated plasma (as a source of C5a des Arg) was also inhibited. 6. These results demonstrate a role for **fucoidin**-sensitive selectins in mediating eosinophil recruitment in vivo.

CT Check Tags: Animal; Comparative Study; Support, Non-U.S. Gov't
Antibodies, Monoclonal: IM, immunology
Antibodies, Monoclonal: PD, pharmacology

*Antigens, CD18: IM, immunology
*Chemotaxis, Leukocyte: DE, drug effects
Chemotaxis, Leukocyte: IM, immunology
Drug Eruptions: IM, immunology
*Eosinophilia: IM, immunology
*Eosinophils: DE, drug effects
Eosinophils: IM, immunology
Guinea Pigs
Integrins: IM, immunology
*Polysaccharides: PD, pharmacology
Receptors, Lymphocyte Homing: IM, immunology
*Selectins: IM, immunology
Skin: DE, drug effects
*Skin: IM, immunology
Tetradecanoylphorbol Acetate
RN 16561-29-8 (Tetradecanoylphorbol Acetate); **9072-19-9 (fucoidan)**
CN 0 (Antibodies, Monoclonal); 0 (Antigens, CD18); 0 (Integrins); 0 (Polysaccharides); 0 (Receptors, Lymphocyte Homing); 0 (Selectins); 0 (integrin alpha4beta1)

L134 ANSWER 3 OF 3 MEDLINE
AN **97228143** MEDLINE
DN **97228143** PubMed ID: **9091581**
TI The association between alpha4-integrin, P-selectin, and E-selectin in an allergic model of inflammation.
AU Kanwar S; Bullard D C; Hickey M J; Smith C W; Beaudet A L; Wolitzky B A; Kubes P
CS Department of Medical Physiology, University of Calgary, Alberta, Canada.
NC AI-32177 (NIAID)
GM-15483 (NIGMS)
HL-42550 (NHLBI)
SO JOURNAL OF EXPERIMENTAL MEDICINE, **(1997 Mar 17)** 185 (6) 1077-87.
Journal code: 2985109R. ISSN: 0022-1007.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199704
ED Entered STN: 19970422
Last Updated on STN: 19970422
Entered Medline: 19970410
AB In this study, we examined the relationship between the endothelial selectins (P-selectin and E-selectin) and whether they are critical for alpha4-integrin-dependent leukocyte recruitment in inflamed (late phase response), cremasteric postcapillary venules. Animals were systemically sensitized and 2 wk later challenged intrascrotally with chicken ovalbumin. Leukocyte rolling flux, adhesion, and emigration were assessed at baseline and 4 and 8 h postantigen challenge. There was a significant increase in leukocyte rolling flux, adhesion, and emigration in sensitized and challenged mice at both 4 and 8 h. At 8 h, the increase in leukocyte rolling flux was approximately 50% inhibitable by an anti-alpha4-integrin antibody, 98% inhibitable by **fucoidin** (a selectin-binding carbohydrate), and 100% inhibitable by an anti-P-selectin antibody. P-selectin-deficient animals displayed no leukocyte rolling or adhesion at 8 h after challenge. However, at 8 h there were many emigrated leukocytes in the perivascular space suggesting P-selectin-independent rolling at an earlier time point. Indeed, at 4 h postantigen challenge in P-selectin-deficient mice, there was increased leukocyte rolling, adhesion, and emigration. The rolling in the P-selectin-deficient mice at 4 h was largely alpha4-integrin dependent. However, there was an essential E-selectin-dependent component inasmuch as an anti-E-selectin antibody completely reversed the rolling, and in E-selectin and P-selectin double deficient mice rolling, adhesion and emigration were completely absent.

These results illustrate that P-selectin underlies all of the antigen-induced rolling with a brief transient contribution from E-selectin in the P-selectin-deficient animals. Finally, the antigen-induced alpha4-integrin-mediated leukocyte recruitment is entirely dependent upon endothelial selectins.

CT Check Tags: Animal; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
*Antigens, CD: PH, physiology
Cell Adhesion
Chickens
Crosses, Genetic
***Hypersensitivity, Immediate: IM, immunology**
Hypersensitivity, Immediate: PP, physiopathology
Immunization
*Inflammation: IM, immunology
Inflammation: PP, physiopathology
L-Selectin: GE, genetics
*L-Selectin: PH, physiology
Leukocytes: IM, immunology
Leukocytes: PH, physiology
Mice
Mice, Inbred C57BL
Mice, Inbred Strains
Mice, Knockout
Ovalbumin: IM, immunology
P-Selectin: GE, genetics
*P-Selectin: PH, physiology
Time Factors
RN 126880-86-2 (L-Selectin); 143198-26-9 (alpha4 integrin); 9006-59-1 (Ovalbumin)
CN 0 (Antigens, CD); 0 (P-Selectin)

=> d his

(FILE 'HOME' ENTERED AT 08:53:17 ON 11 MAR 2003)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 08:53:28 ON 11 MAR 2003
E FUCOIDAN/CT
E E3+ALL
L1 684 S E4

FILE 'REGISTRY' ENTERED AT 08:53:58 ON 11 MAR 2003
L2 1 S 9072-19-9
L3 5 S 9072-19-9/CRN

FILE 'HCAPLUS' ENTERED AT 08:54:41 ON 11 MAR 2003
L4 1028 S FUCOIDIN# OR FUCOIDAN# OR NEMACYSTUS MUCILAGE
L5 5 S L3
L6 1048 S L1,L4,L5
E FUCOIDAN
L7 739 S E3
L8 316 S E15,E17
L9 1048 S L6-L8
L10 225 S NITROGEN MONOOXIDE

FILE 'REGISTRY' ENTERED AT 08:56:36 ON 11 MAR 2003
L11 1 S 10102-43-9

FILE 'HCAPLUS' ENTERED AT 08:57:40 ON 11 MAR 2003
L12 70393 S L11
L13 135853 S OHM11771 OR OHM()(11771 OR 11 771) OR NITROGEN()(MONOXIDE OR
L14 7 S L10,L12,L13 AND L9

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                E INTERLEUKIN/CT
L15        5859 S E39
                E E144+ALL
L16        6645 S E23,E46
L17       85930 S E7,E6+NT
L18      117789 S IL OR IL12 OR INTERLEUKIN OR (IL OR INTERLEUKIN)(L)12
L19          38 S L9 AND L15-L18
                E INTERFERON/CT
L20         300 S E3
L21       30764 S E89
                E E71+ALL
L22       54117 S E6+NT
L23       30764 S E6(L)GAMMA
L24       41617 S IFNGAMMA OR GAMMAIFN OR (IFN OR INTERFERON)(L)GAMMA
L25          15 S L9 AND L20-L24
                E IGE/CT
                E E3+ALL
L26        9782 S E2
                E IMMUNOGLOBULIN/CT
                E IMMUNOGLOBULINS/CT
L27        9782 S E38,E39
                E  E3+ALL
L28       10193 S E7,E6 (L) "E"
L29           3 S L9 AND L26-L28
L30           6 S L9 AND (IGE OR (IG OR IMMUNOGLOBULIN)(S)"E")
                E CYTOKINE/CT
                E E48+ALL
L31       76929 S E5,E4
L32      157526 S E4+NT
L33          46 S L9 AND L31,L32
L34          37 S L9 AND CYTOKINE
L35          18 S L9 AND LYMPHOKINE
L36          66 S L14,L19,L25,L29,L30,L33-L35
                E WO2000-JP5489/AP,PRN
L37           1 S E3,E4
                E JP99-234262/AP,PRN
L38           1 S E4
                E JP2000-69223/AP,PRN
L39           1 S E4
                E TAKARA/PA,CS
L40         772 S E93-E129
L41        1582 S E3-E145
L42        3405 S (TAKARA? OR SHUZO?)/PA,CS
L43          29 S L9 AND L40-L42
                E TOMINAGA T/AU
L44         218 S E3,E4,E17-E19
                E TAKANARI/AU
                E YAMASHITA S/AU
L45         385 S E3
                E YAMASHITA SYU/AU
L46           7 S E6,E7
                E SYUSAK/AU
                E MIZUTANI S/AU
L47         106 S E3,E34
                E SHIGETOSHI/AU
                E SAGAWA H/AU
L48         386 S E3,E11,E12
                E HIROAKI S/AU
L49           1 S E3
                E KATO I/AU
L50         728 S E3-E5,E22-E25
                E IKUNOSH/AU
L51           5 S E4
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L52          35 S L44-L51 AND L9
L53           2 S L36 AND L43,L52
L54          34 S L43,L52 NOT L53
L55          14 S L54 AND (FOOD# OR FEED? OR BEVERAGE# OR HEALTH FOOD# OR DRUG#
                SEL DN AN 3 6 10 13 14
L56           9 S L55 NOT E1-E15
L57           0 S L54 AND (FOOD? OR NUTRI?)/SC,SX NOT L55
L58          64 S L36 NOT L40-L57
                SEL DN AN 12 14 16 27 30 40 52
L59           7 S L58 AND E16-E36
                E ALLERGY/CT
                E E3+ALL
L60       19556 S E3,E2+NT
                E E15+ALL
L61        7639 S E3
                E E7+ALL
L62        6554 S E4
                E E15+ALL
L63       13841 S E5
                E E4+ALL
L64       31196 S E4+NT
                E E13+ALL
L65        8958 S E4,E3+NT
                E IMMUN/CT
                E IMMUNOS/CT
L66       15342 S E12+NT OR E20+NT
L67       25407 S E26+NT OR E27+NT
L68          26 S L9 AND L60-L67
L69          11 S L68 NOT L36,L40-L59
L70          91 S L9 AND (NUTRI? OR FOOD? OR FEED? OR BEVERAG? OR DRINK? OR JUI
L71          79 S L9 AND (BEVERAG? OR ?DRINK? OR ?JUICE? OR FOOD? OR FEED?)/BI
L72          30 S L9 (L) FFD/RL
L73          18 S L53,L56,L59
L74           4 S L68 AND L73
L75          18 S L73,L74
L76          14 S L70-L72 AND L75
L77          18 S L75,L76
L78          89 S L70-L72 NOT L77
L79          67 S L78 AND (PY<=2000 OR PRY<=2000 OR AY<=2000)
L80          37 S L79 AND (FOOD? OR NUTRI?)/SC
                SEL DN AN 5 24
L81           2 S L80 AND E1-E6
L82          20 S L77,L81
L83          30 S L79 NOT L80
L84          74 S L9 AND (?INFLAM? OR LEUKOTRIEN?)
L85          19 S L84 AND L19,L29,L30,L36,L60-L69
L86           1 S L84 AND L70-L72
L87          20 S L85,L86
                SEL DN AN 10 11 14 15 16 19 20
L88           7 S E7-E27 AND L87
L89          27 S L82,L88 AND L4-L10,L12-L88

     FILE 'REGISTRY' ENTERED AT 09:53:35 ON 11 MAR 2003

     FILE 'HCAPLUS' ENTERED AT 09:53:56 ON 11 MAR 2003

     FILE 'REGISTRY' ENTERED AT 09:55:26 ON 11 MAR 2003
L90           1 S 328081-45-4

     FILE 'HCAPLUS' ENTERED AT 09:55:36 ON 11 MAR 2003
L91           1 S L90

     FILE 'USPATFULL, USPAT2' ENTERED AT 09:55:40 ON 11 MAR 2003
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L92           0 S L90

     FILE 'REGISTRY' ENTERED AT 09:55:49 ON 11 MAR 2003

     FILE 'HCAPLUS' ENTERED AT 09:55:57 ON 11 MAR 2003
               SEL PN APPS L91

     FILE 'WPIX' ENTERED AT 09:56:31 ON 11 MAR 2003
L93           1 S E28-E35
L94         135 S L4/BIX OR L7/BIX OR L8/BIX
                E FUCOID
L95         138 S E3-E6,E8-E12/BIX
L96         138 S L94,L95
                E RAOXPW/DCN
                E RA0XPW/DCN
L97          21 S E3-E11
L98         138 S L96,L97
L99           7 S L98 AND (A61P037 OR A61P043)/IC,ICM,ICS,ICA,ICI
L100          8 S L98 AND (B14-G02 OR B14-G02A OR C14-G02 OR B14-G02A OR B12-D
L101          5 S L98 AND (B14-L03 OR C14-L03 OR B14-L06 OR C14-L06 OR B12-G01
L102         13 S L98 AND D03-H01T?/MC
L103          7 S L98 AND (P431 OR P617)/M0,M1,M2,M3,M4,M5,M6
L104         19 S L98 AND (TAKARA? OR SHUZO?)/PA
L105         16 S L98 AND (TOMINAGA ? OR YAMASHITA ? OR MIZUTANI ? OR SAGAWA ?
L106          7 S L99-L103 AND L104,L105
L107         19 S L99-L103 NOT L106
L108         26 S L106,L107
L109         14 S L104,L105 NOT L108

     FILE 'WPIX' ENTERED AT 10:08:09 ON 11 MAR 2003

     FILE 'FROSTI' ENTERED AT 10:08:52 ON 11 MAR 2003
L110         16 S L4 OR L7 OR L8
                E FUCOI
L111         16 S E4,E8-E10
L112         16 S L110,L111
L113          8 S L112 AND (ALLERG? OR FUNCTIONAL FOOD?)
L114         11 S L112 AND PATENT
L115         11 S L113,L114
L116          5 S L112 NOT L115

     FILE 'FROSTI' ENTERED AT 10:11:20 ON 11 MAR 2003

     FILE 'FSTA' ENTERED AT 10:11:31 ON 11 MAR 2003
L117         32 S L110
                E FUCOI
L118         32 S E4,E7,E8 OR L117

     FILE 'MEDLINE' ENTERED AT 10:12:46 ON 11 MAR 2003
L119        612 S L9
                E FUCOID
L120        513 S E4,E5,E8,E9,E12
L121        191 S E13-E15
L122        619 S L119-L121
                E ALLERGY/CT
                E E3+ALL
                E E2+ALL
L123          4 S E3+NT AND L122
L124          5 S L10,L12,L13 AND L122
                E CYTOKINE/CT
L125         67 S E8+NT AND L122
                E INTERLEUKINS/CT
                E E3+ALL
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L126          19 S E25+NT AND L122
                 E INTERFERONS/CT
                 E E3+ALL
L127           5 S E51+NT AND L122
                 E IGE/CT
                 E E3+ALL
                 E E2+ALL
L128           1 S E46+NT AND L122
L129           0 S E55+NT AND L122
L130          76 S L123-L128
L131          64 S L130 AND PY<=2000
L132           2 S L131 NOT AB/FA
L133          62 S L131 NOT L132
                 SEL DN AN 7 27 32
L134           3 S L133 AND E1-E9

     FILE 'MEDLINE' ENTERED AT 10:20:53 ON 11 MAR 2003
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